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Reconsidering the Puebloan Languages in a Southwestern Areal Context

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1. INTRODUCTION

Areal linguistics involves the study of prehistoric linguistic interactions, and as such offers exciting insights into linguistic universals and human prehistory. Linguistic areas are the result of contact between speakers and can have profound effects on languages the extent of which has yet to be fully uncovered. Although the concept of linguistic areas has been discussed since before Trubetzkoy (1928) first used the term 'Sprachbund' to describe areas of linguistic convergence, we do not yet have standard well defined vocabulary to discuss areal phenomena, despite their importance in linguistics, archeology, anthropology, and almost every other field which studies humans. To address this issue, I will posit my own definitions for various terms used in discussion of areal phenomena. Although this thesis focuses on a specific case study, the Pueblos and the North American Southwest (hereafter referred to as the Southwest), these concepts and definitions should have application to other linguistic areas beyond the Pueblos and Southwest, including those which are generally accepted (see Appendix A).

I will not only discuss and define the concept of a "linguistic area," but also the terms used to analyze and evaluate linguistic areas. The overall goal of this thesis is to clarify linguistic areas and the terms surrounding them so that future research in this important domain will be as consistent, clear, and useful as possible. To that end, I make distinctions between concepts which I believe have been erroneously combined, such as, *feature* vs. *trait*, *strength* vs. *intensity*, and *markedness* vs. *expectancy*. It is necessary to differentiate these terms because it ensures specificity and accuracy in the description and analysis of linguistic areas and diffusion of linguistic traits in them. While anthropologists and archeologists have largely agreed that the Pueblos are culturally a subarea of the Southwest, there has been very little work into the

linguistic connections between these two areas. Linguistic diffusion can be just as informative as material and cultural evidence in studying human history and prehistory.[1] As I will discuss in 2.1. and 2.2., languages can change at a much slower rate than cultures do and languages tend to retain relics of their earlier stages. Archeological evidence relies on a particular group of people using materials which will last long enough for archeologists to find and study them. Because of this, linguistic evidence can be used to complement material evidence to illuminate aspects of cultures which have not preserved in the material record. Through reconstructions of language families and proto-languages, linguists are able to also reconstruct pieces of the culture(s) of the proto-language's speakers. Language areas offer very similar evidence. As in any field of study, different methods offer different insights. The fact that, in the case of the Pueblos, the linguistic evidence serves to affirm previously known cultural and archeological evidence should not be seen as repetitive but as both a reassurance that the previous analyses are correct and the opening of a new path of analysis.

The Southwest is a culture area which covers Arizona and New Mexico, south and western Texas, northern Mexico (except for the northeastern coast) and extends slightly into southern Utah, Colorado, and Nevada and southeastern California.[2] The Pueblo region is a much more tightly knit subsection of the Southwest culture area. This area includes eastern Arizona, much of New Mexico, excluding the southern most part, and the western most tip of Texas where Ysleta del Sur lies.[3] The connections between the Pueblos and other areas of the Southwest are

[1] Throughout this thesis, the term history/historical will always contrast with prehistory/prehistorical. The former will always refer the time after the introduction of writing in a particular culture, while the latter will always refer to pre-writing culture.

[2] See Appendix B for a list of the cultures of the Southwest.

[3] See Appendix C for a list of the cultures of the Pueblos.

necessary to flesh out because of their implications for the prehistorical contact of the Pueblos and surrounding areas, including the internal relations of the Kiowa-Tanoan language family and, to a lesser extent, the Northern Uto-Aztecan subfamily.

The major question this thesis will be addressing is the status of the Puebloan languages as constituting a linguistic area within the Southwest. Because the Pueblos' status as a cultural subarea of the Southwest is generally accepted by anthropologists, archeologists, and linguists alike, my analysis will center on the regions' linguistic connections over the cultural connections, although I will discuss both their cultural and linguistic connections throughout the thesis. As I will discuss in section 2, linguistic and culture areas are not mutually dependent so that one can potentially arise without the existence of the other, and when they do arise in similar areas there are no constraints forcing them to necessarily line up with one another. Because they both develop out of similar historical and prehistorical circumstances, they often do line up, and one of the questions that this thesis addresses is whether or not the Southwest and Pueblo culture areas line up with linguistic areas.

This thesis is organized as follows. In section 2 I will discuss the history, theories and issues surrounding culture and linguistic areas. In section 3 I will give a brief background of the history and prehistory of the Southwest and Pueblos, focusing on information which is pertinent to their linguo-cultural relations. In section 4 I will evaluate the Pueblos as a linguistic area, and then the Southwest as a whole and its possible connections to other surrounding culture areas, specifically the Great Basin, southern Plains, and southern California. In this section I reevaluate the many features which Sherzer (1976) and Bereznak (1995) have examined as possible areal traits of the Pueblos, based on much of the research which has been done since their analyses,

especially the cross linguistic frequency of structural features of language using the World Atlas of Language Structures (Dryer & Haspelmath 2011) (hereafter referred to as WALS). The cultural significance of the Pueblos as a trade center of the surrounding area, which expands much further than the Southwest, has made it an ideal area for contact among speakers from many cultures and regions so that it, unsurprisingly, seems to be at least one of the centers of the Greater Southwest linguistic area. Because the Southwest has not been as significant a trade or cultural center it does not show the same intra-linguistic ties that the Pueblos show, instead, probably due to geography, it appears to help tie the Pueblos to southern California and possibly the Great Basin and southern Plains.

2. CULTURE AND LINGUISTIC AREAS

In order to examine the degree of contact between the Pueblos and the North American Southwest, this thesis will use the theories of culture areas and linguistic areas. The various controversies surrounding these theories as well as justification for their use will be examined in this section.

2.1. Culture Areas

Culture areas are historical and geographical "units" which are meant to reflect intense contact and trade among peoples. Murphy & Murphy (1986:204) says "the trend towards convergence of the cultures of adjoining or nearby societies has resulted in regions of cultural similarity, called 'culture areas.'" Culture areas have been largely dismissed or ignored in the modern anthropological literature (Baron Pineda p.c.). One of the reasons for this is their now

controversial origins, which will be discussed later in this section. I hold, though, that the theory of culture areas is still worth consideration. However, the notion does need to be updated to account for contemporary theories on culture. In this section I will first briefly outline Kroeber's original theory of culture areas, and then I will suggest possible modifications to his theory after examining critiques and defenses of the theory. As this thesis is largely concerned with the linguistic connections of the Pueblos and North American Southwest, this section will be relatively brief. Because of modern criticisms of the culture area concept, however, it is necessary to examine the possible uses and limitations of this concept.

2.1.1. History and Critiques of Culture Areas

While other scholars in the early 1900s, such as Boas and Sapir, had similar ideas, Kroeber was the first to put forth a unified theory of historical and geographical units called culture areas (Buckley 1988). Kroeber saw cultures as categorizable entities which had quantifiable traits that could be used to show intense historical and prehistorical contact. He counted these elements to determine the "intensity"[4][5] of the culture (Buckley 1988). He also counted shared elements to create groupings of cultures, which had subgroups of greater and fewer overlapping traits, called cultural centers and peripheries, respectively. Cultural centers were made up of the cultures which most typified the culture area, whereas the peripheries showed fewer cultural traits in

[4] According to Buckley (1988), "intensity" essentially refers to the amount of elements a culture has i.e. "more intense" cultures will have more countable traits.

[5] "Intensity" as Buckley (1988) and Kroeber use it is slightly different from my definition of intensity for linguistic areas. For culture areas, "intensity" essentially refers to the level to which a culture can be considered prototypical of an area. When discussing linguistic areas, though, "intensity" refers to the amount of influence a linguistic area has had over the languages within the area.

common with the rest of the area. Kroeber also saw cultures as hierarchal, with higher ranked cultures being more "advanced" than lower ranked cultures (Kroeber 1939).

For example, in one of his most well known culture areas, the Northwest California culture area, Kroeber said that the Yurok peoples were essentially the prototypical group of the Northwest California area, and they were also the most advanced peoples in the area (Kroeber 1939, Buckley 1988:15). This caused discontent among the Yurok Indians, as well as among the Hupas and Karuks, who Kroeber (1939) saw as more peripheral cultures in the Northwest California area. Many subsequent anthropologists only studied Yurok people, because Kroeber suggested that the entire area could be studied by examining the prototypical cultures (Buckley 1988:15). This caused the Yurok to feel misrepresented, while the Hupa and Karuk peoples felt understudied and ignored. Kroeber's use of culture area centers and peripheries fed the illusion at the time of cultural homogeneity, as he argued that peripheral cultures were simply lesser versions of the areal center cultures (Buckley 1988:15-16).

Despite the problems associated the notion of culture areas as it was used in the early and mid-1900s, it would be detrimental to contemporary scholars' understanding of human prehistory to ignore regions of the world where intense cultural contact and trade has historically and prehistorically taken place. One example of a region where the concept of culture areas is helpful, aside from the Northwestern California culture area, is in Mesoamerica, which scholars have largely accepted as a culture area due to the many shared cultural "traits," including pyramids and the heavy use of quetzal feathers (Campbell, Kaufman & Smith-Stark 1986). I use quotation marks for the word "traits" in the above sentence because cultures do not have features or traits in that same way that languages do. Quantifying a given culture's "traits" brings up the

problem of what receives the status of "trait" and what is ignored (Baron Pineda p.c.). What is the difference between a culture's specific rituals and their tendency towards something seemingly more mundane such as the purchasing of green Honda Odysseys? Green Honda Odysseys may be just as much of a cultural trait as a coming of age ritual involving stinging bugs and fire, but may not be as appealing to anthropologists, sociologists, etc. and might be ignored. The above example also presents another problem where scholars must be careful to avoid "averaging" cultures and promoting the idea of native cultures being static things which can be boiled down to rituals, traditions, clothing, gods, etc. all of which are distinctly different from "Western"[6] culture. To some extent it is possible to create a list of a culture's features, however, scholars must be cognizant of the fact that this list will not be completely representative of the culture being examined and that there will be many aspects that may be hidden from or ignored by the observer, but which are still relevant features of the culture.

Archeology offers linguists a model for using this problematic, yet still useful, concept. In archeology, a culture area is used to show boundaries of shared material cultures. While it may suggest consistency across an area, there is little to no evidence that such uniformity existed (Anna Neuzil p.c.). Because of their usefulness, though, archeologists use them and are simply conscious of the flaws inherent in the concept (Anna Neuzil p.c.). Examples of this use are the Clovis culture, which stretches across North America, and which is largely characterized by the Clovis projectile point, and the Mogollon, Hohokam and Ancestral Pueblo Peoples cultures of the Southwest, which are characterized by many cultural features, including: kivas, ball courts, domesticated turkeys and dogs, and weak societal stratification (for a more complete list of

[6] Abu Lughod (2008) shows that this moniker is misleading because it suggests that the many dissimilar cultures which are included in it are more similar than they actually are.

distinguishing features see Woodbury (1979)). Archeologists do not assume these areas represented vast stretches of cultural homogeneity. Instead the areas show possible historical connections based on shared material practices. Because of this, culture areas can, to some extent, be quantitative in that researchers can count shared cultural traits as long as they realize that it is in no way representative of the entirety of any of the cultures in the area.

Linguists already use a concept that is, in some ways, as problematic as culture areas: protolanguages. A protolanguage is a singular hypothetical language used to represent features of the many varieties of the proto-language which led to its daughter language(s). For example, Indo-European was most likely never spoken exactly as it is reconstructed by any single group. Instead, the reconstructions for Proto-Indo-European reflect features of the varieties of Indo-European which led to the various shared and similar features, cognates, etc. that suggests genetic heritage. Dixon (1997) proposes that some proto-languages are actually the result of diffusional effects and areal linguistic phenomena[7] which have become more similar during periods of equilibrium, when genetically distinct languages begin to converge in their development. If Dixon (1997)'s theory is correct, then some proto-languages reflect linguistic areas containing multiple languages which may be genetically unrelated.

One major difference between languages and cultures, which makes linguistic areas much less problematic than culture areas, is the issue of finiteness. While languages have a finite number of features to use (e.g. there are only six possible basic word orders;[8] many, but not infinite, possible phoneme repertoires; etc.), cultures do not have this limitation. The fact that languages have a finite number of features to draw on allows linguists to compare and contrast

[7] I will discuss and define "areal phenomena" in 2.2.

[8] The six possible word orders are: SOV, SVO, VOS, VSO, OVS, and OSV.

them. For example, Haspelmath (2011) compares plurality marking in languages to see which ones mark plurality on nouns and, for those that do, what some of the basic rules governing plural marking are.[9] Cultures may have overlapping features, but these may differ in meaning or form from one culture to another. While the Ancient Egyptians and Mesoamericans both built pyramids, these pyramids resemble each other only in their essentially pyramidal shape. Even this shape differs: the Egyptians built smooth sided pyramids, while the Mesoamericans' used stepped sides. In Las Vegas there are copies of the Egyptian pyramids which are built with glass and metal, instead of stone, and are hotel casinos instead of burial chambers. A high front unrounded lax vowel, on the other hand, sounds the same in any language,[10] allowing linguists to examine how that sound affects, or is affected by, surrounding sounds in one language compared to another.

Despite the difficulties in comparing and analyzing cultures, anthropology and linguistics should not shy away from the idea of culture areas, where they apply. Instead, anthropologists and linguists should use them as tools for examining human prehistory and recognize the inherent problems in them. No single tool is a tell-all and different methods and approaches will offer different insights into human prehistory. What is not preserved in the culture and memory of living people may be preserved in the material record, and the historical linguistic record may reflect other aspects of prehistorical human life, contact, and migration.

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[9] Haspelmath (2011) uses: no nominal plural; plural only in human nouns, optional; plural only in human nouns, obligatory; plural in all nouns, always optional; plural in all nouns, optional in inanimates; plural in all nouns, always obligatory.

[10] This assumes similar phonetic environment.

2.2. Linguistic Areas

A linguistic area is "a geographical area in which, due to borrowing and language contact, languages of a region come to share certain structural features" (Campbell 1998:330-1). Campbell (1997) cites Mary R. Haas as saying, "it is by now well-accepted that languages of the same geographical area may come to resemble each other in a variety of ways and hence it is clear that it is just as important to delineate areal resemblances as it is to depict genetic resemblances" (Haas 1976:347, cited in Campbell 1997:330). Correctly identifying linguistic areas is very important because it can help linguists establish and clarify the genetic classification of languages, which in itself is important because it can inform theories on prehistoric language (and therefore speaker) movements, speaker and language contact, language universals, etc. Languages that seem to be linked by relation to a shared common ancestor may in fact only share a number of linguistic traits because of historical and prehistorical contact, rather than a linguistic genetic relation. This situation can lead to errors of analysis. For example Bereznak (1995:195-6) says that the level of diffusion among the Puebloan languages may have been a major contributor to the now debunked Aztec-Tanoan hypothesis,[11] and Campbell (1997:269-73) notes that a number of the proposed cognate sets are known instances of lexical diffusion. Shaul (1985:586) argues that matchings involving *l* and *r* are more likely evidence of diffusion than genetic relation. Aside from their effect on the genetic classification of languages and historical contact among speakers, linguistic areas also contribute to linguists' knowledge of language change, as well as to theories of language universals and exceptions to them.

[11] This hypothesis, put forth in Whorf & Trager (1937), genetically links the Uto-Aztecan and Kiowa-Tanoan families.

Historical linguistics, including areal linguistics, also contributes to anthropology by revealing things about the prehistoric human past which are unavailable to other methods of inquiry like archaeology. One major example of this is the use of linguistic analysis to find the homelands of language families. Because cultures do not necessarily descend from each other in the same way as languages, it can be much more difficult to trace their movement patterns. Boas (1911) says that the Magyar of Europe have retained their original (non-Indo-European) language, but adopted European culture, and that some groups who speak Athabaskan languages, whose homeland lies in northwestern North America, have moved south and adopted cultures of the Pueblos, Plains, California, etc.

Historical linguistics, though, can offer explanations for how related (speakers of) languages came to their present locations. Dakin & Wichmann (2000) posit that the Pipil arrived in their modern day location in El Salvador because the Teotihuacán elites sent them to control the cacao there, since at the time it was in very high demand. This is important because it gives insight into who lived in Teotihuacán, their status within the city, and the city's relationship with the surrounding area.

Linguistic areas are reflections of speaker contact over time and, depending on the amount shared among the areal languages, the length of time speakers have been in contact, as well as the intensity of that contact. To apply this notion to a specific case study, research on the Puebloan linguistic area can shed light on subgrouping in the Kiowa-Tanoan family, hierarchies of linguistic borrowing as well as other possible language universals including: phonological contrasts (specifically voicing contrasts), tone, pronominal systems, and syntactic processes (specifically noun incorporation) (Bereznak 1995). Along with raising questions for linguists,

Puebloan areal analysis can bring up questions for other fields, some of which may be near unanswerable without such areal linguistic analysis, such as whether the "foreigner-wariness," which is so prevalent among Puebloan peoples, and which makes their languages and cultures so difficult to research, originated pre- or post-contact with the Spanish.

The aforementioned textbook definition of linguistic areas, taken from Campbell (1998), is very general and does not fully describe linguistic areas. To develop this definition I will examine the definitions used by Sherzer (1973) and Brown (2011). Along with and through these descriptions I will examine questions which are still being discussed within areal linguistics such as: What are the criteria for a linguistic feature to be considered an areal trait?; What is the difference between diagnostic and non-diagnostic traits?; Is it possible that areal traits can originate from a source outside of a given linguistic area?; and, Should linguistic areas be viewed as binary phenomena or should they instead be analyzed based on their "strength?" These questions must be discussed by areal linguists since disagreement on them can lead to wildly different, and sometimes even contradictory, analyses of linguistic areas.

Once I have offered an adequate definition for linguistic areas I will briefly discuss the history of language classification, focusing on the debate between Franz Boas and Edward Sapir about what features of languages are borrowable. I will then discuss the tree vs. wave models and their impact on language classification. To show that linguistic areas are real phenomena, which help scholars to gauge the level of pre-historic culture contact in a given geographic area, I will examine the generally accepted Mesoamerican linguistic area as well as a critique of its exact traits. Finally, I will discuss my methods for this study as well as methods used by other researchers with a focus on the circumstanialist vs. historicist approaches of areal analysis.

2.2.1. A Brief Overview of Areal Linguistics

One of the most important questions in the field of areal linguistics is: "What is an areal trait?" This question lies within the larger question of: "What aspects of language are able to be borrowed by languages?" In this next section I will briefly discuss the history behind the debate and show that pretty much anything is available for linguistic diffusion from one language to another, which is an important finding for areal linguistics.

2.2.1.1 The Question of Borrowability

In the early 1900s, Boas and Sapir debated the role that diffusion plays in language change. Much of this debate was centered around remote genetic relationships because, as Boas said, significant structural borrowing was possible and, therefore, it can be difficult to distinguish structural traits gained through genetic inheritance and those gained through linguistic diffusion. Sapir disagreed and argued that while certain surface features were susceptible to borrowing, the more deeply ingrained morphological content was not and, therefore, one could find genetic relationships through examination of morphology (Bereznak 1995).

Boas's beliefs on the widespread nature of diffusion was very influential in the Prague school where Trubetzkoy (1928) (as cited in Bereznak 1995) first coined the term SPRACHBUND, meaning 'union of languages', but Jakobson was also a major force in the study of linguistic diffusion (Bereznak 1995:6-7). Sprachbund as a term and idea was brought to the United States by Emeneau (1980[1956] as cited in Bereznak 1995) and Velten (1943 as cited in Bereznak 1995), who translated Sprachbund as 'linguistic area.' Emeneau's major research was into the

India linguistic area, while Velten examined diffusional influences on Nez Perce, a language spoken in the Pacific Northwest region of the U.S. (Bereznak 1995). Other linguists use the term "convergence area" (Hock & Joseph 1996:370) to discuss the same phenomena.

Over time, one of the major developments in areal linguistics was the discovery, and acceptance, of the ability for any linguistic feature to diffuse from one language into another (Bereznak 1995): phonemes, phonological rules, morphemes, syntactic patterns, etc. At the phonemic level, click consonants have diffused into Nguni languages from their Khoisan neighbors (Irvine & Gal 2009). Mamean languages have gained the phonological rule of $C_{[velar\ stop]} > C^{j} / \_VC_{[+uvular]}$ from K'ichean (Campbell 1997). An example of morphosyntactic borrowing can be found in Estonian, which has gained the analytic possessive construction and verb-final subordinate clauses from German (Weinreich 1953, as cited in Bereznak 1995).

Heath (1978:105) proposes a number of factors that may influence morpheme diffusibility. These are: syllabicity, sharpness of morpheme boundaries, unifunctionality, categorical clarity, and analogical freedom. Syllabicity means that bound morphemes are more easily diffused if they are independently pronounceable. Bereznak (1995:8-9) uses an example from the Pueblos, which is the probable diffusion of the Hopi inchoative *-ti* to Zuni. Because the morpheme consists of a full syllable, it is pronounceable in isolation and, therefore, more easily diffused. Sharpness of boundaries simply means that morphemes which contrast with ø are more easily diffused than those which contrast with something else, thereby affecting the obviousness of their absence. Bereznak (1995:9) again uses the example from the Pueblos, i.e. the Hopi inchoative *-ti*, because it also contrasts with ø. Unifunctionality says that morphemes with only one function are more easily diffused than those with multiple. For example, a suffix which only

codes for past tense would be much more easily diffused than one which codes for the 3rd person and future tense. Categorical clarity refers to morphemes which more clearly stand alone being more easily diffused than those that do not. In other words, a morpheme which only marks the past tense is more easily diffused than one that marks past negative when the entire verb complex and the presence or absence of a negative morpheme is examined (Bereznak 1995:9). The last factor, analogical freedom, says, "morphemes which are free from analogical pressure from other morphemes are more easily diffused" (Bereznak 1995:9). An example of this, taken from Bereznak (1995:9), is that bound pronominals are not easily diffusible because independent pronouns exert analogical pressure on them.

While there are factors which may affect the likeliness of a linguistic trait to diffuse, all evidence suggests that anything from any language can diffuse into any other language. The fact that not everything will diffuse in all cases has to do with factors which require further research that is far outside the scope of this thesis. While this thesis does not discuss these factors, sociolinguistic, geolinguistic (the study of language in relation to geography) and historical linguistic research has been key in trying to find language specific reasons for the diffusion of certain factors over others. Often times the reason certain features are diffused over others is connected to the nature of the contact between speakers. For example, speakers with primarily religious interactions will diffuse features related to religious and symbolic speech, whereas primarily trade relationships will yield linguistic convergence in features related to trade. For further reading on this subject see Hernandez-Campoy & Conde-Silvestre (2009), Rogers (1985), Milroy & Milroy (1985), as well as works by Labov (e.g. 2001), or Trudgill (e.g. 1974, 1986).

Examining the social and linguistic environments that lead to certain features diffusing across languages is an important part of the study of areal linguistics, but one difficult to pursue in a prehistoric context. The study of prehistoric linguistic feature diffusion both illuminates prehistoric human interaction and migration which may have been too long ago for material evidence to survive, as well as supplementing material evidence with linguistic evidence of contact, which may help put the material evidence into context. As I will explore in 2.2.1.2., areal linguistics can problematize existing language families and the family tree model as a whole.

2.2.1.2. The Language Family Tree Model

The study of areal linguistics brings up questions of the validity of the language tree model familiar from historical linguistics. Dixon (1997) argues that the family tree model of language classification does not always accurately show language evolution. He specifically points out linguistic areas as being sources of problems for family tree models. Dixon (1997:51-3) argues that if we were to ignore the work done on Indo-European genetic classification, linguists in the future might posit that English, French and German all split from the same branch in Indo-European.[12] While the family tree model works incredibly well for the description of some language families (e.g. Indo-European and Austronesian languages), Dixon (1997) says that this is a rarity among global languages.

The ideal family tree situation is for a single parent language to split into a few daughter languages, which, in turn, split into a small number of other languages and so on (Dixon 1997).

[12] This of course assumes that English continues in its historical and current direction of incorporation of French morphosyntactic features such as the affixes *re-*, *-ify*, *-able* in addition to the loss of Germanic morphosyntactic features.

Dixon (1997) says that one of the major problems with applying the family tree model across the board is that many of the families which cleanly fit into it have factors involve that are not of the norm in human history. Austronesian fits into the model, because of expansion of peoples into the previously unoccupied Pacific Islands (meaning that influence from other languages or families was impossible), and the Indo-European tree we see today was the result of "an aggressive and imperialistic race, spreading and conquering" which essentially replaced non-Indo-European languages in its path (Dixon 1997:30). Dixon (1997:97-102) argues that probably the more common origin of a language family is a group of geographically contiguous languages, which linguistically converge over a period of equilibrium and then explode and branch during a period of punctuation. Periods of punctuation may be caused by any number of factors which affect the status quo in a given culture or cultures, such as the rise of a powerful military leader, or new religious order. This period causes languages to split, branch, and dissimilate. A period of equilibrium is a time of relative sociopolitical calm during which languages converge in their development. Because of the period of equilibrium, unrelated languages converge to the extent that their sudden 'branching' mimics genetic relationships by expressing predictable morphosyntactic feature, systematic sound correspondences and other features which linguistic use to prove genetic relation. Dixon (1997)'s theory also allows for these daughters of linguistic areas to have a 'homeland' because they did move out from a single geographic region.

One example of a place where the family tree model may not work very well is in North America. In cases like the Pueblos, the level of linguistic influence has been so misleading that some scholars have posited a prehistorical ancestor language, Aztec(o)-Tanoan, to account for

the level of similarity between Tanoan languages and the Uto-Aztecan languages with which they have come into contact.[13] As previously mentioned, Dixon (1997) says cases such as these are rare and, therefore, it may be necessary to look towards Johannes Schmidt's wave model for a more accurate description of linguistic relationships in areas such as the Americas, since it incorporates non-genetic linguistic influence. This in no way suggests that the family tree model should be disregarded in areas such as North America, however, since many examples of genetic relations have been proven to the satisfaction of even the most conservative historical linguists—see Campbell (1997) for extensive discussion and review of linguistic genetic proposals in the Americas. Linguists must ensure that they pay close attention to contact between unrelated languages, which has the potential to mimic genetic relationships.

2.2.2. Constituting a Linguistic Area

Sherzer (1973) provides the following definition of LINGUISTIC AREA:

> "A LINGUISTIC AREA is defined here as an area in which SEVERAL linguistic traits are shared by the languages of the area and [in which] furthermore, there is evidence (linguistic and non-linguistic) that contact between speakers of the languages contributed to the spread and/or retention of these traits and thereby to a certain degree of linguistic uniformity within the area. It is important to remember that languages which are unrelated or distantly related may very well and probably do disagree with regard to many traits and yet still [be] in the same linguistic area according to the above definition, since they share SEVERAL traits (which one might want to call diagnostic traits)." (Sherzer 1973:760) (cited in Campbell, Kaufman & Smith-Stark 1986:532; bracketed material from Campbell, Kaufman & Smith-Stark 1986).

One key piece of this definition is that it does not mention culture areas or even culture. While, to date, most linguists have searched for linguistic areas among groups of people in the world

[13] Much of Whorf & Trager (1937)'s Uto-Aztecan evidence for Aztec(o)-Tanoan came from Hopi, a Puebloan language. (Hill 2002).

who are believed to constitute a culture area, this may have more to do with convenience than with empirical connections between linguistic areas and culture areas. That is, both linguistic areas and culture areas require contact and, therefore, are likely to arise in the same or similar areas. However, they are not dependent on each other for their own existence. A linguistic area may arise in a zone which does not constitute a culture area, and vice versa. One reason for this is the difference in their basic requirements. Because a culture area is the diffusion of cultural traits it requires intense trade of some kind (i.e. goods trading, politics, inter-marriage, etc.). Linguistic areas, because they arise from the diffusion of linguistic features, require widespread bi- or multilingualism (Aikhenvald & Dixon 2001). While widespread bi- or multilingualism often occurs among cultures who are in intense trade relationships, it is not a requirement. Likewise it is not necessary for intense trade to occur in places with widespread bi- or multilingualism.

One proposed linguistic area which does not line up with culture areas is the Colombian-Central American area (Campbell 1997:347 cites Constenla 1991 and 1992:103). This area includes the Chibchan languages, Lencan, Jicaquean, Misumalpan, Chocoan, and Betoi. Some of the proposed areal traits are: voicing contrasts in stops and fricatives; exclusive Subject-Object-Verb (SOV) word order; postpositions; mostly Genitive-Noun order; Noun-Numeral order; clause-initial question words; absence of gender opposition in pronouns and inflection; and 'morphological economy'—"...the presence of lexical compounds rather than independent roots" (Campbell 1997:347). This linguistic area does not line up with the Intermediate Culture Area, (which spans lower Central America from Honduras to part of northern South America),

and yet Campbell (1997) says it is convincing as a linguistic area because of the isoglosses shown in Constenla (1991, 1992, cited in Campbell 1997).

Sherzer (1976) and Campbell (1985) also argue that linguistic traits are not as easily diffused as non-linguistic traits (such as technology, myths, stories, etc.) because they require more time and widespread bilingualism, something that is not necessary for cultural diffusion. In fact, the use of culture areas may hinder the search for linguistic areas since, as I will argue later in this thesis, linguistic areas may span many posited culture areas, or may exist in places where no culture areas are posited. It is difficult to find literature on linguistic areas in places which are not culture areas, however, as aforementioned, this has more to do with the fact that it is much easier to find a linguistic area in a place where scholars know there has been intense historical contact than in places where less is known about the prehistorical interaction among speakers in a geographic area. There are very likely undiscovered areas of the world where linguistic evidence for convergence and diffusion is the only surviving evidence for prehistoric contact. Another reason these two theories must be distanced from each other is because the controversy surrounding culture areas (discussed in 2.1.) should have no effect on the legitimacy of linguistic areas.

Returning to Sherzer (1973)'s definition or linguistic area, another important piece is the use of the word "SEVERAL". While a single trait may be diffused across a given area, it would be difficult to say that that region truly represents a linguistic area. As I will discuss further in 4.4., linguistic areas are meant to reflect areas of mutual contact. A single trait shared across many languages could reflect a chain of diffusion where only certain languages are in contact, which is not a linguistic area, rather than an area where all languages are in mutual contact. My definition

of a linguistic area does not strictly require that all languages be in direct contact, however, as I will argue in 4.4., anything more than one or two intermediate languages weakens the notion of linguistic areas and their usefulness. While it is possible for several features to reflect a chain of diffusion, it is far easier to differentiate between chain diffusional effects and areal diffusional effects. The requirement of several shared traits in an area prevents the theory of linguistic areas to be applied too liberally. In order for linguistic areas to be scientifically and academically useful tools for studying the history and prehistory of languages and peoples, it is necessary to ensure that the definitions of linguistic areas do not over-generate to the point where every human language can be areally linked simply by the fact that they share the fact that they are spoken by the same species.

One must also note that Sherzer (1973)'s definition, while requiring "several" traits, does not actually offer a specific number of traits required to constitute a linguistic area. This is common across definitions of linguistic areas and has to do with the difficulty of drawing sharp lines between linguistic areas which share many traits and those which only share a few. The reason for this has to do with the fact that, while it is important that definitions for linguistic areas not over-generate, it is equally important that definitions be general enough so as to account for anything and everything which fits into the phenomenon. Campbell, Kaufman & Smith-Stark (1986) poetically and socratically answer the question of "how many traits are required to constitute a linguistic area?" with "How many grains of sand does it take to make a heap? How many birds are needed to constitute a flock? or How many students are required to make a class?" (Campbell, Kaufman & Smith-Stark 1986:532). I will discuss linguistic areas as gradient phenomena more after I have discussed the criteria for areal traits.

While Sherzer (1973)'s definition is strong, it does have problems. One of the most apparent is that it may over-generate language areas because it does not fully stipulate how the traits must come to be shared. While Sherzer (1973) does say that speakers within the area must have "contributed to the spread and/or retention of [shared] traits" (Sherzer 1973:760), his definition downplays the importance of diffusion in the creation of linguistic areas. In fact, as I will show throughout this section, diffusion is the most important factor in the creation of a linguistic area. By Sherzer (1973)'s definition, genetically related languages which are also geographically contiguous could constitute a linguistic area, because even distantly related languages share numerous traits and speakers did contribute to the spread and/or retention of traits through their shared proto-language. Because of this areal over-generation problem, it is necessary to examine more definitions of linguistic areas. One particularly useful recent addition to the literature on this topic is offered by Brown (2011).

For Brown (2011), "a linguistic area is apparent when geographically contiguous languages, some of which are not genetically related to one another, share linguistic features, and when feature sharing is largely explained by areal diffusion (i.e., borrowing) rather than by factors such as inheritance from a common ancestor, universal tendencies, or coincidence" (171). Brown (2011)'s definition largely solves Sherzer (1973)'s problem of over-generation because he says that trait[14]-sharing must be largely explainable by borrowing and not by other factors such as genetic lineage. This is important because it stipulates that while areal traits may be gained

[14] While Brown (2011) uses the term "features", I will use the term "traits" throughout this thesis because I found it to be more frequently used in the context of areal linguistics, and also because its use avoids any potential confusion with other notions of "feature" in linguistics, e.g. phonological features, morphological features, syntactic features, etc.

through chance, genetic inheritance or universal tendencies for one or even a few languages, the majority of the languages must have gained the trait through borrowing.

Like Sherzer (1973)'s definition, though, Brown (2011)'s definition is not perfect. One problem with his definition is that he requires that at least some of the languages involved in a linguistic area not be related. While most, if not all, generally accepted linguistic areas have languages from multiple families, this has more to do with academic and scientific convenience than necessary limitations on the phenomenon. In other words, that a group of languages in a geographically contiguous area, which share a number of traits, are genetically related does not preclude them from being a linguistic area of their own. In addition, genetically related languages can also make-up a linguistic area to the exclusion of other languages in their family being spoken in the same general area. Related languages can theoretically constitute an area because their speakers can live in neighboring areas, have intense historical contact and, most importantly, diffuse traits among themselves. The problem with possible linguistic areas which only have one family is that it can be very difficult to separate traits gained through diffusion and traits inherited through the languages' common ancestor. However, in cases where this differentiation is possible, the possibility of areal status should be considered.

Babel, Garrett, Houser & Toosarvandani (in press) discuss instances of diffusion within Numic, one of the subfamilies of Northern Uto-Aztecan, which is largely spoken in the Great Basin. One of their examples, which could be areal traits, is the diffusion of the objective case suffix *-na* across Western Numic and Timbisha, whose boundaries touch. They also account for the lack of *-na* in Northern Paiute by suggesting that the objective proclitic *ka=* in may have supplanted *-na* as part of the massive reconstruction of the Northern Paiute case inventory (Babel

et al. in press). The aspectual suffix *-pɨnnɨ* has also diffused among Northern Paiute, Shoshoni, and Timbisha, all of which are also geographically contiguous languages (Babel et al. in press). Mono Lake Northern Paiute, Mono, Timbisha, and Shoshoni have all lost reduplication as a marker of pluractionality. While Southern Numic, Comanche and the Northern varieties of Northern Paiute retain this feature, the aforementioned languages instead use suffixes to express iteration or repetition of an action. In the languages which only use suffixes to express pluractionality, there are some suppletive verbs forms which have retained the reduplication. While the Great Basin is not yet considered a linguistic area, Babel et al. (in press) do show that intrafamily diffusion is entirely possible and this should be considered when examining possible linguistic areas.

Brown (2011)'s requirement that areal diffusion must account for the existence of a trait in most of the languages which express it is also not entirely correct. Some areal traits may only be found in a few languages of a given linguistic area and only one of those languages may have gained the trait through diffusion. As I will argue later, with the massive amount of localized diffusion among the Puebloan languages, such cases may not make a strong case for areal status when compared to traits which have diffused into many languages in the area. When coupled with other traits with similarly small diffusion areas, though, such traits can help delineate an area.

2.2.2.1. Areal Traits

Before continuing with my discussion of linguistic areas I must define and discuss a term that I have already introduced and will be using frequently throughout this thesis: AREAL TRAIT. I

largely agree with Bereznak (1995)'s definition of a feature[15] as, "a structural feature of a language, such as a phonological or morphosyntactic feature" (Bereznak 1995:13 footnote). However, Bereznak (1995)'s definition will over-generate for areal traits because it does not make any mention of *how* a given language gained the trait. Therefore, I propose to define areal traits as follows:

> (X) Areal Trait Defined: An areal trait is any diffusible aspect of language which can be shown in a particular instance to have been gained, retained, or lost, by at least one language, through *significant* contact among speakers, and not through chance, genetic relation, or any other means.

One of the most important words in my definition is the word "significant". I use this because some inheritable aspects of language, such as lexical borrowings, are incredibly susceptible to diffusion without significant contact. Campbell, Kaufman & Smith-Stark (1986:535) argue that grammars of languages have "gaps"[16] which borrowings from other languages can fill. The most clear examples of this being when languages borrow words from other languages for new features or aspects of their physical environment. For example, English borrowed *impala* from Zulu because English speakers had not previously encountered impalas and simply borrowed the Zulu word for them instead of creating a new word. Borrowings such as these, which are often incredibly easily accepted into a language, should be considered at most

[15] Bereznak (1995:13 footnote) uses "trait" instead of "feature" here, however, because I differentiate between the two in this thesis I call this her definition of a feature.

[16] These are essentially areas where a language may be less efficient at getting across some kind of information. For example, in English there are no evidential markers, therefore, speakers must insert an extra phrase if they want to indicate the source of the information. For Turkish and Persian, though, it is part of the modal system and nothing needs to be added.

very weak areal traits and should only be used to bolster the evidence for and strength of an area which already has ample evidence for it. In my research, no scholars used borrowed words as evidence except in cases where they were a class of words that aligned with cultural borrowings too and, therefore, did show a significant amount of contact (Bereznak 1995). One example, which I will discuss further later in this thesis, is the diffusion of ceremonial language, the names of the cardinal directions, and the sex of the Ego as a factor in kinship terminology distinctions among the Puebloan languages.

The first distinction among areal traits is that of RELATIVE STRENGTH. The relative strength of an areal trait is based on a number of different factors, which are essentially meant to reflect the amount of inter-linguistic contact that was necessary for one trait to diffuse into a given language of the area. These are: the relative MARKEDNESS of the trait, level of incorporation of the trait within the receiving language(s), the difficulty with which that trait is diffused into a given language, and the spread of the trait across the area. It is important to note that linguistic features do not have inherent strength; instead their strength changes based on the genetic heritage of the receiving language(s), as well as the features found in geographically surrounding languages.[17]

In this thesis I follow the definition of markedness given by Kean (1992): "the concept of markedness in its most general characterization is concerned with the distinction between what is neutral, natural, or most expected (UNMARKED) and what departs from the neutral (MARKED) along some designated parameter" (Kean 1992:390-1). The level of markedness of a feature is mainly based on a feature's cross-linguistic frequency (Kean 1992:390-1). The more common a

[17] The relevant geographic area can be quite large depending on the trait and area. As I will show in my discussion of the Pueblos and Southwest, the entirety of North America is possibly a relevant area for some traits.

feature is cross-linguistically, the more unmarked it is. This concept is not language specific; instead, markedness levels of features are constant across languages.

The language-specific version of markedness I will call EXPECTEDNESS. Expectedness factors in language-specific environments which may affect the likelihood that a given marked trait will be found in a language. For example, features gained through inheritance would be expected in a language because, although related languages may not be in the surrounding area, these features are found in the language's relatives. Expectedness ensures a more accurate view of the relative strength of an area. For example, Gil (2001) shows obligatory numeral classifiers as cross-linguistically uncommon, making them a marked feature of any language. However, they clump in South East Asia, Oceania and Central America. Therefore, for proposed linguistic areas within these regions, obligatory numeral classifiers would likely be an expected feature of languages in these areas. Should obligatory numeral classifiers be found in an area outside of one of the aforementioned regions, it would likely be considered an unexpected feature, as well as marked, and may be an effect of areal diffusion. Expectedness is affected by the cross-linguistic frequency of a feature but is not ruled by it. Features which are incredibly common cross-linguistically will generally be expected unless they appear in an area which does not have the trait. In the Northwest Coast languages, for example, three geographically contiguous language families lack nasals entirely: Salishan: Twana and Lushootseed; Chimakuan: Quileute; Wakashan: Makah and Nitinat (Mithun 1999:20). All of these share the phonological shift of **m* and **n* > *b* and *d* (Mithun 1999:20). Because nasals are nearly cross-linguistically universal (Mithun 1999:20), they are extremely lightly marked traits. Lack of nasals is an areal trait of the Northwest Coast, so the feature is expected in languages of the area.

Similarly, cross-linguistically rare features are generally unexpected, as with Irvine & Gal (2009)'s click consonant example, where southern African Nguni languages have gained click consonants through influence from Khoi languages. Markedness and expectedness are very important in determining both the status of features as possible areal traits and a trait's relative strength because heavily marked and unexpected traits should quickly rule out, or at least make less likely, the possibility of a given language sharing a feature with another language in a given area through shared genetic inheritance, chance convergent innovation, or any other possibility besides areal influence causing either the shared innovation or diffusion of a particular linguistic feature.

Equally important, unmarked and lightly marked features, which are also expected, make the likelihood of non-areal explanations much higher for the origin of a shared feature. Campbell, Kaufman & Smith-Stark (1986) also argue that highly marked features generally exist in a language in more superficial positions of the linguistic structure. Therefore, the level to which a highly marked areal trait is ingrained in a given language affects the relative strength of the areal trait (i.e. the more deeply embedded the highly marked areal trait is in the receiving language the stronger the trait is).

Level of incorporation can add weight to heavily and lightly marked areal traits, but one must be careful. Campbell, Kaufman & Smith-Stark (1986) show that just because a trait is deeply embedded in the grammar of a receiving language does not always mean it was due to long-term contact. They argue that sometimes features are borrowed into a language at a superficial position and then those become more ingrained over time through use and semantic or functional expansion of the feature. There are also cases where traits are diffused and their

integration into a language may be hindered by social reasons. Cases like this include those discussed in Irvine & Gal (2009), where click consonants entered the Nguni languages, such as Zulu and Xhosa, of southern Africa through contact with the Khoi. The problem lies in the fact that the click consonants are viewed as foreign by Nguni speakers and are used as phonemic substitutes in words to avoid saying words which are similar to names of people who are dead or as a sort of honorific. In this case, there has been intense contact, intermarriage and bilingualism between Nguni and Khoi speakers, but Nguni speakers have kept the diffused phonemes as monikers of the "foreign" so that they fulfill a cultural need. Analysis of this feature's level of incorporation is likely to be affected by the examiner's theoretical background. An examiner from the pure linguistics side may see this trait as only being superficially incorporated because the consonants are viewed as foreign to the speakers and they only have a prosodic role, rather than a structural one. However, if the examiner favors the analysis of language in context, then this feature may be considered fairly ingrained because it is governed by cultural rules and mandated in certain circumstances.

Different linguistic features have different levels of BORROWABILITY and the likelihood that a feature will diffuse affects the relative strength of it as an areal trait. Even features which are generally seen as universally easily borrowed, such as lexical items, have different borrowability levels. Tadmor, Haspelmath & Taylor (2010) find that not all lexical items are equally borrowable. Content words are more borrowable than function words and nouns are more borrowable than verbs and adjectives (Tadmor et al. 2010:243-4). Within semantic fields, words pertaining to religion and belief are very borrowable and words pertaining to sense perception are much less borrowable (Tadmor et al. 2010:232-3). Features which are very easily

diffused, such as nouns relating to religion and belief, are, in general, not good indications of intense areal contact over long periods of time because it is possible that they are not at all a result of long term contact. One example of this is Heath (1978)'s borrowability factors for morphemes (syllabicity, sharpness of boundaries, unifunctionality, categorical clarity, and analogical freedom), discussed above in section 2.2.1.1.

A very strong areal trait is one which is heavily marked, deeply ingrained in all receiving languages, and very rarely borrowed. A very weak areal trait, on the other hand, is one which is lightly marked or unmarked, only exists on the superficial level of receiving languages' grammars, and is frequently borrowed. Because the feature is still diffused, though, it should still be regarded as an areal trait.

Because areal traits are reflective of linguistic contact, influence, and convergence, AREAL PRESSURE is another aspect of areal traits. Areal pressure is the retention, or loss, of a linguistic feature, generally an inherited one, because of the influence of surrounding languages. In order to prove that a trait exists, or does not exist, in a language because of areal pressure, an examiner must prove that this feature has been lost, or retained, in related languages. For example, areal pressure would not be a reasonable explanation for the existence of reduplication in any Uto-Aztecan language because none of them have lost the feature. Sherzer (1976:81) argues that Tillamook, a Salishan language of the Northwest Coast, may have lost its labial order due to contact with neighboring Athapaskan languages. Sherzer (1976) hypothesizes this because Tillamook is the only Salishan language which has lost its labial stop order and it neighbors Athapaskan languages, which are now extinct, also lack a labial order.

Besides being strong or weak, traits can also be DIAGNOSTIC or NON-DIAGNOSTIC of a given area. Diagnosticness is solely related to geographic spread of the trait and not the relative strength. Both Campbell, Kaufman & Smith-Stark (1986) and Bereznak (1995) differentiate between diagnostic and non-diagnostic areal traits. While neither explicitly define these terms they imply that the difference lies in how useful they are in delineating the boundaries of the area. In my definition, the only distinguishing factor between diagnostic and non-diagnostic areal traits is their spread across the linguistic area. Areal traits which only appear in a geographically small portion of a linguistic area, regardless of their relative strength, are excluded from being considered diagnostic traits. Strength does play into an areal trait's status as diagnostic insofar as it must be an accepted as an areal trait. Because of this, extremely weak, but widespread areal traits are generally eliminated from diagnostic status because they are often more controversial (thus causing their relative weakness).

The idea of STRONG versus WEAK areal traits brings up the issue of linguistic areas as gradient or binary phenomena. Campbell, Kaufman & Smith-Stark (1986) argue that the former is true because it is impossible to say how many traits a group of languages need to share and, therefore, instead of analyzing linguistic areas as being categorical or not, they should be analyzed based on their relative strength. A linguistic area's strength, ideally, is reflective of the amount and intensity of contact among speakers in that area: i.e. the more intense the contact, the more defined the region is as a linguistic area. Campbell, Kaufman & Smith-Stark (1986) may use the idea of linguistic areas as areal phenomena too liberally, since they argue that one diffused trait should be enough to call the languages which share that trait an area. In 2.2.2. above I quoted their rhetorical questions: "How many grains of sand does it take to make a heap?

How many birds are needed to constitute a flock? or How many students are required to make a class?" (532). Just as a single grain of sand does not make a heap and a single bird does not make a flock, in my view a single trait diffused amongst a number of languages does not make a linguistic area. Rather, it takes "several", as Sherzer (1976) also notes. In this case, several is very loosely defined and is related to a number of factors which determine the relative strength of an area, discussed in 2.2.2.

The problem with allowing areas to be defined by a single trait is that it over-generates linguistic areas to the point where some of them may not indicate significant contact or bi- or multilingualism, which Aikhenvald & Dixon (2001) maintain is necessary for the definition of language areas. Campbell (1997:341) himself admits this to some extent in his discussion of Sherzer (1976)'s proposed "Northeast Area" (Sherzer 1976:188-201). Campbell points out that of Sherzer (1976)'s central areal traits of the Northeast Area, Sherzer only considers one (a single series of stops) to be characteristic of the area. Campbell then says that this means that it is "not a very well defined area" (Campbell 1997:341). Campbell does go on to list other proposed regional areal traits offered by Sherzer (1976), however, Campbell also admits that while the pronominal dual may be an areal trait, the only other conclusive one, besides the aforementioned single series of stops, is nasalized vowels. He also admits that it is very difficult to draw a boundary between the Northeast and Southeast areas because some traits lie in areas with languages which may be contained in both. Because Campbell (1997) only recognizes two areal traits as fully proven and uncontroversial, the Northeast area is difficult to reign in. In cases such as this, where extremely few possible areal traits have been identified (in this case two), it is perhaps better for linguists to consider the area in need of further exploration and possibly an

area in which languages have had some influence over each other. However, to call the Northeast a linguistic area, with only two accepted areal traits, seems to put it on a similar level as Mesoamerica and the Balkans. While it is possible that further research will provide more traits, thus far, the linguistic evidence does not suggest intense long-term contact.

Recall that relative strength is linked to the likelihood that diffusion is the primary cause of the appearance of a given feature in a language. For weak areal traits, other factors such as chance, inheritance, etc. are still possible factors which must be considered so that these traits may still remain controversial. The strongest possible areal trait, though, would be a feature which has been proven to have entered an area's language(s) through diffusion with all other alternative explanations being impossible. Similarly, the relative strength of a linguistic area is the likelihood that it is, in fact, a linguistic area. Weak linguistic areas are ones which are still very controversial, whereas strong linguistic areas are not controversial in their existence as linguistic areas, although the exact traits which make them up may still be up for debate. Relative strength is not related to the relative intensity of an area. Intensity, in this case is related to the amount of influence a linguistic area has had on the languages contained within it. Appendix A shows a number of generally accepted linguistic areas around the world. One reason that relative strength cannot relate to level of influence is the range of the various areas' traits. The Balkans and South Asian linguistic areas have by far the most traits, with 10 and 8 respectively, and yet they are just as strong as the Northwest Coast and Clear Lake linguistic area, which only have 4 and 2 accepted traits. One reason for the disparity in the number of traits is that definitively proving traits is very difficult. It is possible that the Balkans, South Asian, Northwest Coast, and Clear Lake linguistic areas all have had the same amount of influence on their respective

languages, but their traits may be more or less difficult to find. As far as strength is concerned, though, several proven areal traits make a linguistic area strong.

The number of languages in a proposed linguistic area which share the same trait, and which have mostly gained it through diffusion, can make a possible areal trait a stronger or weaker areal trait. Campbell, Kaufman & Smith-Stark (1986) show that traits which are expressed in more of an area's languages are much more diagnostic of an area than traits which only appear in a few of the languages. However, Bereznak (1995) argues that, in fact, traits diffusing over large areas and many languages are fairly uncommon. Instead, a better way to delineate a linguistic area is by examining bundled isoglosses, which are overlapping diffusion areas of single traits which clump in certain areas. These create a stronger linguistic area than one which only has one or two widely dispersed traits.

The fact that traits which might be considered diagnostic are likely not very cross-areally common brings up the question of whether or not the distinction between diagnostic and non-diagnostic traits is actually a helpful one. I assert that not only is the distinction unhelpful, but it can actually be a hindrance to academic exploration. The problem with focusing on traits which have diffused across most or all of a given linguistic area is that they become the defining traits of the area to the ignoring of other more localized, yet potentially equally significant, traits. A lack of diagnostic traits does not weaken a linguistic area as long as the bundled localized diffusion outlines a continuous geographic area.

I propose that the idea of linguistic areas being made up of many instances of localized diffusion be expanded to linguistic areas themselves, which can sometimes be made up of many smaller, tighter areas that connect to form larger linguistic areas. It is possible, and I will discuss

this point more in section 4.4 of this thesis, that the Pueblos may be a part of a larger linguistic area that spans the Great Basin, Southwest and Plains. Larger linguistic areas which contain smaller, more closely connected areas within them, have the potential to offer a great deal of insight on prehistoric speaker contact and, more specifically, levels of contact between populations of speakers. Speakers within the more tightly knit areas will historically and prehistorically have had more contact amongst themselves than with the populations in the larger linguistic area. Campbell & Poser (2008) use the concept of linguistic areas and subareas. Subareas are linguistic areas which are contained within larger linguistic areas. These are purely relational terms and should be used for linguistic areas that may have languages within them which are more connected to each other than they are to the other languages in the area. The Pueblos, for example, may have eastern and western sub-areas within the Pueblo area because there are strong areal traits which are only found in the languages of the eastern and western Pueblos.

One question that arises when discussing areal traits concerns the general assumption that any trait with connections outside of a given linguistic area cannot be an areal trait. One example that will be elaborated further on is Brown (2011)'s dismissal of certain Mesoamerican calques[18] because of their Spanish origin. Brown (2011) shows that this is too simple an assumption when he says that Mesoamerican languages using the word for 'molar' to also mean 'grindstone' is not a Mesoamerican areal trait because it was likely introduced through Spanish contact. However it is not seen in surrounding native languages, all of whom have also had intense Spanish contact and may therefore represent a case of areal incorporation. The use of the word for 'molar' to also

[18] A calque is a word or phrase borrowed from another language by literal word-for-word or root-for-root translation. An example from English is the word 'antibody' which is a calque of German 'antikörper' (OED Online).

mean ‘grindstone’ was introduced by the Spanish but it may have spread through analogy with Nahuatl, because Nahuatl was the lingua franca of the area. This case may represent a relatively weak areal trait, however, as the introduction of the traits from an outside source, in this case Spanish, should not necessarily preclude them from being possible areal traits. It is theoretically possible for a trait to be borrowed into one or more languages of a given linguistic area from a non-areal language and then have it be incorporated in a way that suggests a relatively strong areal tendency. Another reason that traits which have been introduced from an outside source should not be precluded from areal status is because they may be reflective of a larger linguistic area and, therefore, should not be so quickly thrown out. As I have suggested earlier in this section, linguistic areas may be sub-areas of larger linguistic areas. These are equally important to our knowledge of speaker contact and movement because they show differing intensities of contact among speakers.

2.2.3. Case Study: Mesoamerica

To show that linguistic areas are genuine phenomena, I will briefly overview the Mesoamerican linguistic area, which has been well researched and is generally accepted by the linguistics community. The classic reference establishing the facts of the area is Campbell, Kaufman & Smith-Stark (1986).

The Mesoamerican linguistic area is comprised of languages in the Otomanguean, Mixe-Zoquean, Totonacan, Uto-Aztecan (just the Aztecan branch), Mayan, and Tequistlatec families, and the isolates Xincan, Lenca, Huave, Cuitlatec, and Tarascan. Campbell, Kaufman & Smith-Stark (1986) have identified five diagnostic traits for this linguistic area: nominal possession;

relational nouns; vigesimal numeral system; non-verb-final basic word order (to which is correlated the absence of switch-reference); and thirteen specific calques.

Nominal possession of the pattern 'his-noun_1 (the) noun_2' is considered a diagnostic trait of Mesoamerica (although some show the pattern '(the) noun_1 his-noun_2') because it is present in most of the Mesoamerican languages and is not found in the immediate neighbors of the Mesoamerican languages (Campbell, Kaufman & Smith-Stark 1986:545). Neither Campbell, Kaufman & Smith-Stark (1986) nor WALS offers any information on the cross-linguistic frequency of that pattern so that I cannot comment on its markedness. Campbell, Kaufman & Smith-Stark (1986:545) do note that Uto-Aztecan languages, with the exception of Nahuatl, do not use this patterning of nominal possession so that it can be considered unexpected for Nahuatl. Because it is not found in the languages surrounding Mesoamerica, it is unlikely that the trait was diffused through an outside source so that diffusion within Mesoamerica is the most likely explanation. Therefore this can also be considered a strong areal trait.

Relational nouns are ones which express locative and related notions and are composed of a noun root and possessive pronominal affixes (Campbell, Kaufman & Smith-Stark 1986:545). The use of relational nouns is considered another diagnostic trait of Mesoamerica because it is widespread throughout the area and because non-areal languages to the south do not use relational nouns and languages to the north use postpositions instead (Campbell, Kaufman & Smith-Stark 1986). Proto-Uto-Aztecan also used postpositions so that Nahuatl could not have inherited this feature, and Mixe-Zoquean languages use postpositions so that it is likely not a family feature of Mixe-Zoquean either (Campbell, Kaufman & Smith-Stark 1986:546). WALS does not offer any frequency data on this feature either, so its cross-linguistic frequency is an

unknown (at least as far as this thesis is concerned) and I cannot comment on its relative markedness. Like nominal possession, of the specific pattern found in Mesoamerica, I cannot comment on the markedness of relational nouns, however, because they do not exist in the surrounding languages and they not family traits of Mixe-Zoquean and Uto-Aztecan, they are unexpected for at least languages in those two families, if not more. This trait can not only be considered diagnostic but also strong.

The use of a vigesimal numeral system is one which would not seem like a diagnostic trait because it is found outside of Mesoamerica; however, in all cases where it is found in the surrounding languages, there is solid proof of its diffusing out from the Mesoamerican languages (Campbell, Kaufman & Smith-Stark 1986:546-7). Comrie (2011) finds vigesimal number systems in ~21% of languages surveyed and, within the Americas, largely isolated to Mesoamerica, as noted in Campbell, Kaufman & Smith-Stark (1986). The cross-linguistic information about this trait indicates that it can be said to be marked, but not heavily. When combined with this trait's expectancy, however, it can be said to be very strong indeed, because, in the Americas, this feature is only expected among Mesoamerican languages. The fact that this feature has, according to Campbell, Kaufman & Smith-Stark (1986), diffused out from Mesoamerica, does not lower this trait's relative strength. Instead, it suggests that the Mesoamerican linguistic area is or was expanding.

Basic word order is considered a diagnostic trait for similar reasons as relational nouns and nominal possession, i.e. Mesoamerica is populated entirely by non-verb-final languages and surrounded by many SOV language. Further evidence for this trait being diagnostic lies in the area's effect on Mixe-Zoquean languages and Nahuatl. Both have features which are often linked

with verb final languages and may be traces of earlier features (e.g. Proto-Uto-Aztecan is believed to have been a verb-final language; Langacker 1977). As far as markedness is concerned, Dryer (2011a) finds non-verb-final basic word order in ~45% of languages surveyed so that it is not a very marked trait. In the Americas, Dryer (2011a) essentially finds clumps of non-verb-final basic word order in northwestern North America, northern and central California, Central America (with a significant clumping in Mesoamerica), and throughout South America (although there do not appear to be any significant centers). This suggests that it is largely unexpected outside of the area, but can be considered very unexpected for Nahuatl, because of its genetic relations, so that this can be seen as a strong areal trait of Mesoamerica.

The final diagnostic trait of the Mesoamerican linguistic area is that of the thirteen shared calques. These are: knee: head (of leg); boa constrictor: deer-snake; lime: ash, stone-ash; wrist: neck (of hand, arm); egg: stone of bird, bone of bird; vein: road (of blood); molar: grindstone (metate); edge: mouth; thumb: mother of hand; gold or silver: god-excrement, sun-excrement; alive: awake; town: water-mountain; porcupine: thorn-opossum or thorn + another animal (Campbell, Kaufman & Smith-Stark 1986, Brown 2011). I have not found any research on the cross-linguistic frequency of specific calques (and it would be quite an undertaking indeed) so that I cannot definitively comment on their markedness, but they can be viewed a significant shared features.

Brown (2011) calls into question some of the Mesoamerican claques though. He argues that six of the thirteen calques are found across the Americas and may show a cross-Amerindian inclination more than a Mesoamerican one, i.e. they are highly expected among Amerindian languages. These calques are: Knee: head (of leg); Wrist: neck (of hand, arm); Vein: road, path

(of blood); Edge: mouth, lip; Finger: younger person, usually relative of hand; Thumb: older person, often relative of hand; Alive: awake (All calque translations from Brown 2011). The other seven calques do not occur outside of the Mesoamerica and are less problematic, they are: Boa constrictor: deer-snake; Lime: ash, stone-ash; Egg: stone of bird, bone of bird; Gold or silver: god-excrement, sun-excrement; Town: water-mountain; Porcupine: thorn-oppossum, or 'thorn' plus some other animal; Molar: grindstone (Calques and translations taken from Campbell, Kaufman & Smith-Stark 1986). Of these, Brown (2011) does not accept 'molar' and 'porcupine' as viable areal traits because they were introduced by the Spanish. I do accept 'porcupine' being removed from areal traits because it shows up in many languages outside of the area and, as Brown (2011) shows, it was probably spread through analogy with the Spanish words *puerco espín* and *zorro espín* (meaning 'thorn pig' and 'thorn fox' respectively) and exists in other languages who came into contact with Spanish. As I discussed previously, though, 'molar' requires more research showing that it was not spread through Nahuatl. Brown (2011) also adds four more possible calques in Mesoamerica that definitely came about post-contact, which are: Sheep: cotton+some mammal; Bread: Castilian tortilla; Chicken, hen (sometimes rooster): Castilian turkey or bird; Wheat: Castilian maize. These are all definitely post-contact traits because they describe things which only entered Mesoamerica from European contact (Brown 2011). These can also be considered areal traits because Brown (2011) says they were probably diffused through Nahuatl, again the Mesoamerican lingua franca at the time, and they do not appear in languages outside of Mesoamerica. These post-contact calques may be a different type of areal trait because their quick incorporation is reflective of a long linguistic areal history before the innovation and diffusion of them. However, they could not spread

without most Mesoamerican speakers being at least competent speakers of Nahuatl. This widespread multilingualism is one of the most important requirements for areal development (Aikhenvald & Dixon 2001) and, therefore, scholars cannot ignore these post-contact calques as evidence for a very strong Mesoamerican linguistic area which existed up to and during the colonial era.

Now that I have shown how others have previously examined linguistic areas, I will discuss my own methods of examining the languages of the Pueblos and Southwest. I will also discuss limitations of my methods.

2.2.4. Methods and Important Questions

This thesis is a review of the literature concerning areal linguistics with a focus on works pertaining to the Southwest and Pueblos. The main sources I will be drawing from and examining are Sherzer (1976) and Bereznak (1995), as both of these works explicitly and directly discuss the questions that I am concerned with in this thesis. My main method for determining areal status of traits and languages will be largely based on what Campbell, Kaufman & Smith-Stark (1986) call the HISTORICIST approach. This approach is generally held in opposition to the CIRCUMSTANTIALIST approach. The circumstantialist approach does not examine the question of whether or not linguistic traits actually diffused from one language to another, nor does it address the question of directionality of diffusion. Instead this approach focuses on counting up traits which the languages in an area share. This approach uses the "more-the-merrier" approach to areal linguistics, that is, more traits means a stronger area (Campbell, Kaufman & Smith-Stark 1986). The circumstantialist approach is very helpful when

used to survey many areas, as done by Sherzer (1976), and as a preliminary examination of an area. However because it is generally not very in-depth or area-specific (Sherzer 1976), for example, uses a fixed list of traits in his examination of many possible North American linguistic areas), the circumstantialist should be used to raise questions of possible linguistic areas, as Sherzer (1976) does, or to compare linguistic areas, but it does not provide enough information to be the final word in the identification of a given linguistic area. To do this the historicist approach is more useful. It goes much more in-depth into an area to differentiate instances of true areal diffusion from shared traits with other possible origins (e.g. chance, shared inheritance from a common ancestor, etc.), as well as to find directionality of diffusion. It also does not adhere to the "more-the-merrier" strawman and examines each possible areal trait more closely to determine its relative strength in a possible linguistic area. The name "historicist approach" comes from its use of the historical and prehistorical social contexts surrounding the area—i.e. the speakers, the languages, and the cultures involved, which the circumstantialist approach largely ignores.

In this thesis I will not be examining in great detail the direction of diffusion. I ignore directionality because it can often be difficult to ascertain, and it is not necessary to prove the existence of a linguistic area. No matter which language or languages first brought non-verb final word order into the Mesoamerican linguistic area, the feature is still an areal trait of the Mesoamerican area. While I have not read any scholars who disagree with this notion, it is still important to note the difference between a feature's trait status and its linguistic origin. Both are essential for fully understanding the history of an area, however, directionality has no effect on the status of a group of languages as a linguistic area nor does it even effect the relative strength

of an area. Directionality is important for understanding the nature of the speaker contact in an area. For example, Zuni borrowed the names of their prey gods from Keresan and Hopi naming ceremonies and the father's sister's task of naming have diffused to Isleta (Bereznak 1995). These cultural and linguistic exchanges suggest that at least some of the interactions between speakers were religious in nature, which we know to be true (Bereznak 1995). Because I have elected to focus only on the status of the Pueblos and Southwest as linguistic areas, my research contributes very little to the specifics of speaker interaction. Information on the specifics of speaker interaction in the Pueblos and Southwest requires further research that lies outside the scope of this thesis, but is no less important for the study of human history and prehistory. As I showed in section 2, linguistic areas can exist independently of known instances of culture contact, however, as I also discussed in section 2, linguistic evidence can add to and modify scholars' understanding of a given culture or cultures, therefore it is helpful to briefly summarize the history of contact within and between the Puebloan and Southwestern regions.

3. Background of the Southwest and Pueblos

Before analyzing the linguistic connections between the Southwest and Pueblo regions, this section will offer cultural, historical and prehistorical background information on the Pueblos and Southwest. I will discuss past culture areal classification of the Pueblos and Southwest and through them discuss the major cultural traits found in the areas, as well as the relevant history and prehistory of the areas. The peoples generally seen to be apart of the Southwest and Pueblos can be found in Appendix B and C respectively.

Before I continue it is necessary to say that the following cultural traits which various scholars have claimed to be reflective of the Pueblos and Southwest as culture areas should not be taken as representative of even a major portion of the cultural traits of the various cultures of the regions. As I pointed out in 2.1., it is a mistake to use cultural traits as anything but a comparative tool. The cultural traits I will be focusing on here will be those which are contained within the available literature and those which have existed within the Southwest and/or Pueblos for a significant period of time and are ingrained in the various cultures. “Significant”, in this case, will be defined as those things focused on by the various scholars who have already done research into the Southwest and Pueblo regions. The reason I am focussing on traits which have existed for a significant amount of time is that those are the most likely to be indicative of long term areal contact. The more ingrained a trait is, the more it probably suggests potential cultural convergence and thus areal status.

Kroeber (1939) takes an ethnographic approach and classified the Pueblos as culturally a part of the Southwest. However, he also notes that the Southwest peoples in Mexico were not as well studied, making it difficult to be absolutely sure. Kroeber (1939) recognized two subareas of the Southwest, which are the Pueblo culture and the Sonora-Gila-Yuma culture. The Sonora-Gila-Yuma sub-area essentially encompasses the Southwest not including the Pueblos (Kroeber 1939). To some extent Kroeber (1939) splits the Pueblo and Sonora-Gila-Yuma cultures based on ecological niches. Kroeber classifies the Pueblos as belonging to his sagebrush-juniper-piñon area, which contains areas of short grass and desert grass with pines in the mountains. He also says that the sagebrush-juniper-piñon area extends beyond the Pueblo area. The Pueblo cultural

features are: masonry, clustered houses, common stories, the kiva ceremonial chamber, [19] altars, sand and meal paintings, masks, ancestor impersonation, elaborate ritual, considerable visual and verbal symbolism (especially for colors, directions, fertility and emergence), matrilineal descent, pacific inclinations, pottery with a whitish ground, and polychrome and glazed painting with texture decoration by corrugating (Kroeber 1939).

The Sonora-Gila-Yuma cultures lie in an area which Kroeber (1939) says is a prevailingly true desert environment with the creosote bush being arguably the characteristic plant and lack of any forest growth outside of the Sierra Madre (Kroeber 1939). Sonora-Gila Yuma culture features are: adobe; wattled and brush houses; villages (instead of towns); no kivas, few altars, little visibly expressed symbolism, simple rituals, few masks, shamans (instead of priests), patrilineal institutions; war-likeness; canal/river overflow irrigation and pottery which was reddish, uncorrogated and either monochromatic or contains a single design. Kroeber (1939) also notes that the Navajo are possibly a connecting culture of the Pueblos and Southwest. By connecting culture, Kroeber (1939) means that Navajo shows elements of both the Southwest and Pueblos, which reflects intense interaction between the two culture areas.

Woodbury (1979) uses an archeological approach and categorizes the Pueblos as a subsection of the Southwest and notes that O.T. Mason (1907:427-30) called the Southwest "Pueblo Country" (Mason 1907:427-30, cited in Woodbury 1979). Woodbury (1979), though, says the Southwest is a more accurate name since the Pueblos are not the focus of the area. Woodbury (1979) largely bases his classification on the prehistory of the area and peoples. According to him, the distinguishing features of the Southwest at the height of prehistorical

[19] A kiva is a room used by Pueblo peoples for religious rituals generally associated with the kachina cults.

development were: Permanent villages with relatively dense populations; regionally differentiated architectural forms (pit houses, jacals, adobe and masonry structures); specialized religions and ritual structures (specifically kivas and ball courts); patterned settlements; agriculture with a variety of irrigation and dry farming methods; domestication of dogs and turkeys; pottery with color decoration and only corrugated surface treatments for texturing; use of many marine shells for ornament; weaving; pipes and cane cigarettes for tobacco; weak stratification of society; successful communal efforts for building religious structures and large-scale irrigation; emphasis on ceremonial elaboration; emphasis on religious over political controls; little to no organized warfare, but still localized raiding; moderate elaboration of mortuary practices (which included cremation and mortuary offerings) with little status differentiation; slight development of human sacrifice including the takings of trophy heads; and a strong continuity with their preagricultural past, which appears in many hunting, gathering, and food preparation techniques.[20] One major reason that both Woodbury (1979) and Martin (1979) consider the Southwest (including the Pueblos) a culture area is that they see any modifications of the above features as stemming from regional and/or temporal variations instead of departures from them.

Prehistorically, three cultures, which were in frequent contact, made up the culture area of the Southwest. These were the Hohokam, the Mogollon (mugējōn), and the Ancestral Puebloans (also known as the Anasazi). The Hohokam were centered in the middle Gila and lower Salt River drainage areas (Gumerman & Haury 1979), while the Mogollon lay in what is modern New Mexico, western Texas and the Mexican states Sonora and Chihuahua. The Ancestral

[20] These features did not all exist in any single geographic area or point in time.

Puebloans, lay mainly in the Colorado plateau, but extended into southern Nevada and central New Mexico. According to Woodbury (1979), environmental pressures forced people to travel over large distances and have familiarity with many different areas. This meant that Southwestern peoples were not isolated for long and had fairly codependent economies (Woodbury 1979).

Before the development of the Hohokam, Mogollon, and Ancestral Pueblo Peoples, the primary culture of the Southwest was Desert culture. The Desert culture existed in the transition from hunting and gathering as the primary means of subsistence to agriculture. One group within Desert culture, which was especially significant for the Pueblos and nearby Southwest, were the Cochise peoples who occupied the uplands of modern day Arizona and New Mexico from about 9,000B.C. to about A.D. 100 (Bereznak 1995). Martin (1979) says that the Cochise likely became the Mogollon somewhere around 300 B.C. In the story of the Pueblo peoples, the Mogollon are especially important as they were in such close contact with the Ancestral Pueblo Peoples that the line between them is quite blurred (Hale & Harris 1979). According to Hale & Harris (1979), Pueblo culture was essentially the creation of the Mogollon and Ancestral Pueblo People cultures. The two major contributions from the Mogollon are the use of kivas and religious practices which likely led to the kachina cults of the modern Pueblo peoples. Hale & Harris (1979) also suggest that the East-West split in the Pueblos may be due to the various Pueblos' major influences. While the Western Pueblos seem to continue Mogollon culture, the Eastern Pueblos adhere much closer to Ancestral Pueblo culture (Hale & Harris 1979)

The kachina cults are one of the most widespread and commonly known Pueblo cultural feature. Hewitt (1943) is an in-depth description of the Pueblo kachina cults and treats each

Puebloan group/cult as having the same general beliefs with culture specific modifications or foci. In general, the Kachina myth says that the Kachina were a group of people who lived in agricultural communities peacefully alongside the Pueblo peoples. The Kachinas fled humankind for various cult specific reasons, such as violence with the Mexicans (Hopi), a person dying after a kachina dance (Zuni), battle between the Kachinas and humans (Keres), etc., but still help the Puebloan peoples when they are called upon. The most important part of any Kachina costume is the mask because it embodies the spirit of the Kachina it represents (Hewitt 1943). While various kachina cults have differing views on the status of the masks as possessions,[21] the masks are always treated as sacred. Masks also have differing levels of sanctity, some masks, which are incredibly old, are seen as being given to the people directly from the Kachina they represent and may only embody the spirit of a single Kachina, while others are remade and destroyed every year and can embody multiple spirits. Invitation into a kachina cult is seen as very important for status for men of the communities, although some Pueblos also let women join. Although there are many kachina dances and Pueblo specific celebrations, Powamu and Niman are the major ceremonies. These each happen once a year and celebrate the arrival and departure of the Kachina spirits, respectively.

Trade was incredibly important for the Pueblo peoples, both trade between the Pueblo communities and with those outside. Trade between the Pueblos was important because it ensured good relations among the various peoples of the area. Whenever crops failed, the various Pueblos traded maize and other food goods with each other to ensure mutual survival (Bereznak 1995, Ford 1983). Despite their late arrival in the Pueblos, the Navajo quickly became ingrained

[21] The western Pueblos tend to see the masks as things which can be possessed, while the eastern Pueblos reject this notion.

in the area. During the Pueblo revolt of the late 1600s, many Puebloans took refuge among the Navajo and intermarried (Kroskrity 1982). They have also adopted many Puebloan cultural traits, such as: matrilineal clans, aversion to fish, the Puebloan creation myth, etc. (Bereznak 1995). Bereznak (1995:59) quotes Ford (1983:712) as saying: "explorers to the Southwest were impressed by the amount of trade the witnessed and the distances walked by the Indian traders...it appears that some Indian traders traveled the breadth of the Southwest from Pecos to the Colorado River and often down into Mexico." As further evidence of the Pueblos as a trade center, archeologists have found Puebloan goods throughout the Southwest, Mesoamerica, Plains and Great Basin (Ford 1983). Likewise, goods from these areas have also been found in the Pueblos (Ford 1983).

While the above discussion of Southwestern and Puebloan prehistory is not linguistic, it does still show the level and length of contact among the peoples, and speakers, of the areas. The historicist approach, as noted above, includes historical context in the analysis of a possible linguistic area. It is possible that there are no linguistic holdovers from the time of the Mogollon, Hohokam, and Ancestral Pueblos. It is necessary, however to note that highly influential cultural features, such as the kachina cults, are not recent innovations, but have existed and shaped the cultures and languages for a significant amount of time.

4. Status and make-up of the Southwest as a Linguistic Area

This section is the major case study of this thesis and will examine the status of the Pueblos within the linguistic context of the Southwest. I will begin with a discussion of the Pueblos as a possible linguistic area of their own (4.1.) and then examine their status as a possible sub-area of

the Southwest (4.2.). I will then examine the Pueblos' and Southwest's connections with the surrounding Plains and Great Basin culture areas (4.3.). This section will end with the discussion of the Americas as a linguistic area and the impact of that theory on the areal status of the Southwest and Pueblos (4.4.).

4.1. The Pueblos as a Linguistic Area

In this section I examine the Pueblos as a possible linguistic area of their own. Before analysis of the data, I will critique the work of my two main sources, Sherzer (1976) (4.1.1.) and Bereznak (1995) (4.1.2.) and put into context their work and any issues surrounding it. I will then analyze the various proposed Puebloan areal traits and end this section with an examination of Puebloan loan words and discussion of the lack thereof. This section will end with a brief discussion of the Azteco-Tanoan hypothesis and its contribution to the possible status of the Pueblos as a linguistic area and the possible East-West subsections of the Pueblo region.

4.1.1. Sherzer (1976)

Sherzer (1976) examines the American culture areas north of Mexico for possible evidence of areal linguistic phenomena. His method is based on the theory that culture areas and linguistic areas arise in similar circumstances, and, therefore, should line up. As I discussed in 2.2.1., culture areas may be useful for identifying places where linguistic areas are likely to develop. However, Campbell (1997: 339, 347) criticizes Sherzer (1976) for this assumption, arguing that the languages of the Great Basin may be apart of a linguistic area which does not line up with their culture area. Likewise, Campbell (1997:347), as I mentioned in 2.2.1., argues that the

Colombian-Central American linguistic area does not line up with the Intermediate Culture Area. Most of Sherzer (1976)'s problems stem from the fact that his work is meant to be an overview, essentially a jumping off point for further research into the areas he examines. Despite the fact that he admits the short comings of his book, it is still necessary to discuss problematic areas to better put his data into context.

Because Sherzer (1976) is an overview, he uses a fixed list of linguistic features which he checks the languages of each culture area against. Bereznak (1995) criticizes this method because it does not treat each possible linguistic area as a unique entity. As I will show in 4.1.3., there are many Puebloan areal traits which Sherzer (1976) misses, such as Classificatory verbs and a 3-way demonstrative system. While I have separated linguistic features which are shared and those which can be considered areal traits, Sherzer (1976)'s method ignores historical data and he only records which features are shared among the languages, regardless of how a given language gained a feature. As I said in 2.2.1.1., a linguistic feature can only be considered an areal trait if it can be shown to have been gained through diffusion. As I discuss in 2.2.1.1., weak areal traits do have other likely explanations for their appearance in a language, but there must still be reasonable evidence to suggest that diffusion is a possibility worth considering. For example, heavy syllable reduplication signifying the distributive is reconstructed for Proto-Uto-Aztecan (Haugen 2009). Because this feature is an inherited feature of Uto-Aztecan languages, its appearance in an Uto-Aztecan language likely not be due to areal diffusion. While areal pressure could be a possible reason for its retention in a given Uto-Aztecan language, many Uto-Aztecan languages, such as Nahuatl and Guarijío, have retained this type of reduplication (Haugen 2009). This makes even areal pressure an equally unlikely possibility for its appearance

in an Uto-Aztecan language. Sherzer (1976) does not separate features which have been shown to have been inherited into a language, or could have been innovated by chance from those which may have been gained through diffusion.

Instead he splits shared features up into three types of traits.[22] WHOLE AREAL TRAITS are features which are found in all languages of a given culture area (Sherzer 1976:11). CENTRAL AREAL TRAITS are those which are found in most languages of a culture are and are notably present among the languages located in the geographic center of the culture area (Sherzer 1976:11). REGIONAL AREAL TRAITS have continuous, or nearly so, distribution in one region of the area (Sherzer 1976:11-2). As I will discuss in 4.1.2., Bereznak (1995) sees the bundling of small overlapping isoglosses, or regional areal traits, as the most common markers of linguistic areas. Sherzer (1976)'s definitions of the three types of traits bring up other problems with his method. The major problem is the inclusion of geographic distribution in the definition of central areal traits. While traits which are found in most of the languages of an area are noteworthy, it is not necessarily safe to assume that those traits must be focused in the geographic center of the area. It is possible that the social center could be present on the geographic peripheries of a cultural or linguistic area, so that the influence of that social center spreads in one direction rather than outward in all directions.

Sherzer (1976:150, 241) says that there is, at best, weak evidence for a Southwest linguistic area, because of the lack of shared features which show a unity of the entire area. Sherzer (1976:150) also says of the Southwest and any possible subareas within it "the mutual influencing among languages does not seem anywhere near as great [in the Southwest and its

[22] Here Sherzer (1976) uses a "trait" in the way not according to the definition I developed in 2.2.1.1. and use elsewhere.

subareas] as in the Northwest Coast and Plateau culture areas." Sherzer (1976) does not treat the Pueblos as a fully separate entity in his overview but he does admit that they may be their own linguistic area, albeit a very weak one. Bereznak (1995:73-4) criticizes Sherzer (1973, 1976) this saying, "he uses a pre-selected trait list...so that there is a good possibility that he misses possible areal traits...Sherzer [1973, 1976] simply presents lists of shared linguistic traits in preconceived culture areas without demonstrating whether or not the similarities are due to diffusion." Sherzer (1976) suggests that there is a possible split between the Pueblo region and the western Southwest languages, with the western languages having ties with southern Californian languages, such as the Takic family of Uto-Aztecan. I will discuss both of these possible subareas in 4.3.

4.1.2. Bereznak (1995)

Bereznak (1995) specifically examines the possibility that the Pueblos are a linguistic area and finds that they are, in fact, their own linguistic area. Bereznak (1995) is a dissertation and her method of choice is similar to mine, in that it is largely an examination of the existing literature. While I agree with Bereznak (1995)'s conclusion I do find many issues within her work. One major concern is her treatment of single varieties as representative of entire languages. For example, in her discussion of tonal contrasts in the Pueblos, she says that all Puebloan languages show tonal contrast except for Zuni (Bereznak 1995:93-4). However, the Third Mesa dialect is the only variety of Hopi that shows tonal contrasts, therefore it is not wholly fair to say that Hopi (as a language) shows tonal contrast, although Bereznak (1995) is probably right that tonal contrasts were gained from contact with Acoma and Navajo. Bereznak (1995) makes this same

mistake when she says that Hopi has pre-aspirated consonants, when, in fact, only the Toreva dialect shows this feature. Hill & Black (1998:864-5) briefly discuss dialect differences and they appear to be mostly phonological with vowels which have grave accent in Third Mesa Hopi having the most variety.

Bereznak (1995:162) compares her possible Pueblo linguistic area to the Mesoamerican linguistic area, concluding that the Mesoamerican linguistic area is "considerably stronger" than the Pueblo area. I believe that she exaggerates the difference in their relative strength and that, while the Mesoamerican linguistic area is stronger, to say that the Mesoamerican area is "considerably stronger" (Bereznak 1995:162) is a misuse of the concepts of relative areal strength and intensity. Because relative strength refers to the likelihood that an area is, in fact, a linguistic area, it becomes difficult to compare the strength of areas which can be definitively proven. The Mesoamerican linguistic area seems near unarguable and, as I will show in my discussion of Puebloan traits, the Pueblo linguistic area is highly likely as well. This is to say that the Mesoamerican linguistic area is stronger, partially due to the large amount of work that has been done and the thoroughness of Campbell, Kaufman & Smith-Stark (1986), however, I argue that the Pueblo linguistic area is also undoubtable, however the specifics of which traits make up the area is debatable.

4.1.3. Puebloan Areal Traits

In this section I will discuss the proposed traits which Sherzer (1976) and Bereznak (1995) have put forth and examined. Because Sherzer (1976) uses a fixed list of traits for all of the native languages north of Mexico, I have left out some which are both absent from the Southwest and

Pueblos and which are not likely to have possibly appeared in the areas, thereby making their absence reasonable and unsurprising. For example, I leave out x̣ and x̣ʷ because they are entirely absent from the areas surrounding the Southwest with the exception of California,[23] and Maddieson (1984) does not seem to find retroflexes to be common sounds, as I will discuss in (7). Because of this, x̣ and x̣ʷ are very unexpected and marked features for Southwest languages so that their absence among Southwestern languages almost certainly is unrelated to areal pressure. Sherzer does not include all languages from every Southwest and Puebloan family in his analysis. The languages he pulls from are:[24]

Family	Language(s)
Yuman	Yuma, Yavapai, Mohave, Walapai, Havasupai
Uto-Aztecan	Tohono O'odham, Hopi
Apachean	Navajo, Western Apache, Chiricahua Apache, Jicarilla Apache
Zuni	Zuni
Keresan	Acoma
Tanoan	Jemez, Tewa, Tiwa

For instances where a feature is only found in some varieties of a language I will write the applicable varieties in parentheses, for example: Tiwa (Isleta).

[23] Where it is only found in Ineseño Chumash, which is not apart of the southern Californian area.

[24] Sherzer (1976) calls Tohono O'odham and Jemez, Papago and Towa, respectively. In this thesis I will not use Sherzer (1976)'s names because modern literature tends to use the former names.

4.1.3.1. Features Examined by Sherzer (1976)

In this section I discuss features which Sherzer (1976) finds are shared among Southwest languages. For ease of reference, I will discuss the features in the order that Sherzer (1976) presents them. I.e. vowels, consonants, then morphosyntax.

Table 1: **Vowels**

Feature	Areal Status
2-2-1 vowel system	Maybe
-vce vowels, nasals, and semivowels	No
Nasalized vowels	No
Phonemic pitch	Weak
/ə/	No

(1) 2-2-1 vowel system: very weak Puebloan areal trait

This refers to a vowel system of /i e a o u/ (Bereznak 1995) and is found in Jemez, Tiwa (Isleta), Zuni, and Keresan (Acoma), and outside of the Pueblos in Coahuiltecan and all Yuman languages (Sherzer 1976:133). Sherzer (1976) posits that its development in some Tanoan languages may be due to contact with Zuni and Keresan. Maddieson (2011a) shows that a 5-6 vowel inventory is the most common vowel inventory in the world, with over 50% of the languages surveyed having vowel systems comprising of 5-6 vowels. It is worth noting that WALS does not contain any chapters on frequency of vowel inventory configurations, so that a

2-2-1 configuration could be the most common 5 vowel system. It is also notable that of the Pueblo and Southwestern languages surveyed, only Cocopa (a Yuman language of the western Southwest) and Navajo did not have 5-6 vowel systems. Therefore, a 5 vowel system is at most an extremely weak areal trait, since it is possible that it diffused into Jemez and Isleta. The 2-2-1 vowel system is a stronger areal trait, because Zuni shows all five of the above vowels and it is possible that Jemez and Isleta gained this specific configuration through diffusion. It is also possible that contact with Yuman or Coahuiltecan caused the development of a 2-2-1 vowel system. While Coahuiltecan is less likely than Zuni, Yuman languages share other traits with Pueblo languages, making it another possible candidate. It is highly unlikely that Jemez and Isleta gained a 2-2-1 vowel configuration from Keresan since Acoma has a 5 vowel system with /ɨ/ instead of /o/, thereby giving it a 3-1-1 vowel system.

(2) Voiceless vowels, semivowels and nasals: Not a Puebloan areal trait

This feature is found in Hopi, Zuni, and Keresan* and outside of the Pueblos in Tohono O'odham (Sherzer 1976). Sherzer also notes that most of the Uto-Aztecan languages in the Great Basin have these features too. Munro (1983) notes that Tübatulabal has word final /n̥/ and Gabrielino has *-y*, which is also voiceless, as a reflex of the Cupan absolutive endings *-š* and *-ča*. Tübatulabal has stress on the ultimate syllable, but Munro (1983) only references it appearing after /*š*/, therefore the stress is not conditioning voicelessness, but the voiceless fricative may be. Based on my own research I cannot say if this is a feature of Northern Uto-Aztecan or is shared between Hopi and Numic for other reasons, however, because neither Sherzer (1976) nor

Bereznak (1995) see this as a possible areal trait, I must agree with them that this is not a Puebloan areal trait.

(3) Nasalized vowels: Not a Puebloan areal trait

This feature is found in all Apachean and Tanoan languages (Sherzer 1976), but Bereznak (1995) says that it is an inherited feature of both families. Kiowa also possesses nasalized vowels and nasalization of vowels is common among Athapaskan languages.[25] Therefore, this feature cannot be considered an areal trait of the Pueblos.

(4) Phonemic pitch: Weak Puebloan areal trait, possibly evident of Greater Southwest[26]

This feature is found in Keresan (Acoma), all Apachean languages, all Tanoan languages (Sherzer 1976), and Hopi (Third Mesa) (Bereznak 1995:93-4, Mithun 1999:25). Tones are genetic traits of Keresan and Tanoan and commonly develop in Athapaskan languages (Bereznak 1995). Bereznak (1995) also argues that tones in the Third Mesa dialect of Hopi likely developed through contact with Acoma or Navajo. It is possible that Third Mesa innovated its simple tone system and this would not wholly defy Maddieson (2011b), who finds that languages with simple tones make up about 25% of the languages surveyed. Maddieson (2011b) categorizes languages which have "only a two-way basic contrast, usually between high and low levels", he also includes languages which might be considered only marginally tonal. Maddieson (2011b) also finds that Hopi lies in an area where several languages have tonal systems (all simple with the exception of Acoma) including Caddo, Kiowa, Yaqui, and the Puebloan languages, except Zuni

[25] Apachean is a subfamily of Athapaskan.

[26] I will discuss Greater Southwest in 4.3.

(Maddieson 2011b). Mithun (1999:24-6) notes that tone can develop through lenitional processes. For example, stressed syllables in Mohawk with final glottal stops, developed a falling tone and vowel length and lost their glottal stop (Mithun 1999:25) so that tone. Mithun (1999:25) notes that a surprising number of languages have developed falling tone before laryngeals, including the above Southwestern and Puebloan languages, and languages of northwest North America, such as Quileute (a Chimakuan language), Bella Bella Heiltsuk (a Wakashan language), Sanya-Henya Tlingit, among others. This common development suggests that simple tone systems can arise through normal phonological processes regardless of areal influence, however Puebloan tonogenesis as a result of diffusion would not be surprising either. Therefore it is worth considering as an areal trait, but it is not a strong one. The surrounding languages are from the Southwest and Plains so that this feature is also possibly an areal trait of a larger linguistic area.

(5) /ə/: Not a Puebloan areal trait

This feature is found in Hopi, Acoma, Jemez, and Tiwa and outside the Pueblos in Tohono O'odham (Sherzer 1976). Sherzer (1976) does not account for this trait by diffusion and I have not found any other scholars considering this feature as a possible areal trait. My research also has not found data on the cross-linguistic frequency of the central mid vowel, therefore, I have no evidence to add to this and must conclude it as not an areal trait, but possibly worth future research.

Table 2: **Consonants**

Here I will discuss consonants which Bereznak (1995) examines as possible Puebloan areal traits.

Feature	Areal Status
3 stop series	Yes
Retroflex sounds	Yes
c/č	Yes
k/k^{w}	No
x	No
x^{w}	Yes
h^{w}	No
ɬ	Yes
ŋ	No
At least 1 rhotic	Mixed
-vce r	Yes

(6) 3 stop series: Puebloan areal trait

This feature refers to a stop consonant series with voiceless/voiced/glottalized consonants. It is found in Keresan (Acoma), Tewa (Santa Clara), Tiwa (Picurís), and all Apachean languages (Sherzer 1976:135). Sherzer (1976:135) says that this feature is inherited in Athapaskan languages. He also says that it is possibly a family trait of Azteco-Tanoan, however, this posited family is not well accepted and a more likely reason for their appearance in Santa

Clara Tewa and Picurís is contact with Keresan and Navajo. As I will show in 4.1.4., the areal trait is more specifically glottalized consonants, but, until 4.1.4., I will consider this an areal trait.

(7) Retroflex sounds: Very weak Puebloan areal trait

This feature is found in Keresan (Acoma) and Tewa (Santa Clara) and outside of the Pueblos in Tohono O'odham and all Yuman languages (Sherzer 1976:136). Sherzer (1976:136) argues that Santa Clara Tewa probably gained retroflexed consonants through contact with Acoma. Retroflexes are not found in any of the other Puebloan or Southwestern languages and is completely absent from the languages of the Plains and Great Basin. Maddieson (1984) does not directly address retroflexes, however, he does note that ~98% of languages articulate stops at bilabial, dental/alveolar, and velar places of articulation, with other places of articulation almost only appearing when the language contrasts stops at four or more places, which occurs in ~44% of languages surveyed. Maddieson (1984) does not discuss retroflexed fricatives at all. Retroflex sounds do not seem to be commonly innovated based on Maddieson (1984)'s findings. Although they do exist outside of the Pueblo region, Sherzer (1976) argues that this could be evidence for a Western Southwest, but I will discuss this in 4.2.3. This feature does seem to be an areal trait of the Pueblo region.

(8) c/č: Weak Puebloan areal trait

The opposition of the voiceless alveolar affricate (c) and the voiceless postalveolar affricate (č) is found in Zuni, Acoma, Tewa (Santa Clara), Hopi (Hill & Black 1998:863), Coahuilteco, and all Apachean languages (Sherzer 1976). Sherzer (1976) says this feature is

inherited in all Apachean languages, but has possibly been diffused into Santa Clara Tewa. Maddieson (1984:38-9) finds that č is by far the most common affricates with c being the second most common, the frequency of both of these fricative does suggest that chance innovation of both sounds is a possibility, although Maddieson (1984) has no comment on the frequency of this opposition. This is possible and represents an areal trait of the Pueblo region, albeit a weak one.

(9) k/k^{w}: Not a Puebloan areal trait, possibly evident of Greater Southwest

The opposition of the voiceless velar stop (k) and the labialized voiceless velar stop (k^{w}) is considered an areal trait[27] of the Hopi-Navajo-Zuni-Tanoan region (Sherzer 1976). Sherzer suggests that this opposition may have developed in Navajo due to contact with nearby languages. Maddieson (1984) finds /k^{w}/ in only 12% of the sampled languages, making it cross-linguistically rare and suggesting that Navajo may not have independently developed the feature. This opposition is also found in all of the Great Basin languages except Washo, and Sherzer (1976) says it is a family trait of Uto-Aztecan. It is also found in the Plains languages Wichita (Caddoan), Comanche (Uto-Aztecan), and Tonkawa (isolate) and in the Southern Californian languages Diegueño (Yuman), Serrano (Uto-Aztecan), Luiseño (Uto-Aztecan), Cupeño (Uto-Aztecan) and Cahuilla (Uto-Aztecan). Because this feature is found in many of the languages known to have had intense long term contact with the Pueblos, they are also likely diffusional sources so that it is at best a weak areal trait of the Pueblos. Sherzer (1976:110) does say that Diegueño (a Yuman language) may have gained the feature through contact with Uto-Aztecan,

[27] Here "trait" is used in the sense of Sherzer (1976), where it means that the feature appears in the languages of this area regardless of the role diffusion has played.

therefore this feature could be evidence of a much larger linguistic area which contains the Pueblos and other culture areas of North America. Bereznak (1995) agrees with this conclusion.

(10) x: Not a Puebloan areal trait

The voiceless velar fricative is found in Tewa (Santa Clara), Navajo, and Tiwa (Taos, Picurís) and outside the Pueblos in Yuma, Coahuilteco and all other Apachean language (Sherzer 1976). This feature is also found in the Uto-Aztecan languages of the Great Basin, although it is a variant of /k/ and in Southern Plains languages: Tonkawa, Kiowa Apache, Lipan Apache, and Arikara (Sherzer 1976). Because other Apachean languages possess this feature it is likely that only Santa Clara Tewa, Taos, and Picurís may have gained this feature through diffusion. However, because many surrounding languages also possess this trait, it is not reasonable to assume that it shows diffusion within the Pueblos. /x/ also regularly corresponds to Proto-Kiowa-Tanoan /k^h/, suggesting that it was gained through regular sound change overtime, as opposed to diffusion (Trager 1942, Hale 1967). Although Sherzer (1976) does not describe the conditioning environment(s) for the k>x shift, Maddieson (1984:42) notes that some Australian languages, which typically do not have fricatives, have developed them as phonemes "from a medial laxing of stops (sometimes coupled with a loss of contrastive vowel length where length was part of the conditioning environment)." This shows that stops allophonically shifting to fricatives is not unheard of, nor would intervocalic lenition of stops be surprising. Neither Sherzer (1976) nor Bereznak (1995) suggest that this trait may have been gained in any Puebloan languages through diffusion. I have found no evidence to suggest this feature may have been gained through diffusion and cannot consider it an areal trait of the Pueblo region.

(11) x^w: Not a Puebloan areal trait

This feature is found in Navajo, Tewa (Santa Clara), and Tiwa (Taos, Picurís) and outside of the Pueblos in Yuma, Coahuilteco, Tonkawa, and all Great Basin Uto-Aztecan languages (i.e. most of Numic), where it is a variant of k^w (Sherzer 1976). This feature is not found in any other Apachean languages nor is it reconstructed for Proto-Athapaskan, making it unique to Navajo (Bereznak 1995). Maddieson (1984) also finds this sound in only 6% of the languages of his sample, which could suggest that Navajo gained the feature through diffusion, however, in Numic languages, [x^w] is the intervocalic allophone of /k^w/ (similar to /x/ in (10)) . Bereznak (1995) says this feature may have been gained in Navajo through contact with Rio Grande Tewa or Taos, I also consider Santa Clara Tewa and Picuris possible sources. While this is possible, Navajo may have also gained the sound in the same way that some Australian languages did, as I discussed in (10), where the sound originally appeared allophonically, but lost its conditioning environment and was retained as a phoneme. This trait, however, must be considered very weak because non-Puebloan languages (Yuma, Tonkawa, and Coahuilteco) are other reasonably possible sources for this feature, as is intervocalic lenition plus loss of the conditioning environment.

(12) h^w: Not a Puebloan areal trait

This feature is found in Navajo, Jemez, Tewa, and Tiwa (Isleta) and outside of the Pueblos in Yavapai (Sherzer 1976). Bereznak (1995) makes no mention of this feature and Sherzer (1976) does not suggest that this trait may have entered any of the aforementioned

languages through diffusional processes. I have found no further evidence to suggest otherwise and, therefore must agree with them.

(13) ɬ: Puebloan areal trait

This feature is found in Hopi, Tiwa, Zuni, and Navajo and outside the Pueblos in Yuma, Tohono O'odham, and all other Apachean languages (Sherzer 1976). Sherzer (1976) says that this is a family trait of Apachean. It is worth noting that Maddieson (2011c) shows that very few languages in the Southwest and surrounding areas have lateral obstruents of any kind and only ~10% of languages in Maddieson (2011c)'s sample showed any kind of lateral obstruent. It does not seem unreasonable to conclude that one or more of the Pueblo languages gained this feature through contact with other Puebloan languages. Bereznak (1995) notes that, with the exception of Apachean languages (which gained the trait through inheritance not diffusion), all languages bordering the Pueblos lack this trait. Because none of Pueblos' neighboring languages show this feature it is reasonable to assume that the source of the feature was one of the Pueblo languages.

(14) ŋ: Not a Puebloan areal trait

There is some disagreement with the geographic distribution of this sound. Sherzer (1976) says this sound is found in Hopi, Keresan (Acoma), and allophonically in Tewa (Arizona) and outside of the Pueblos in Yuma, Walapai, Washo, and varieties of Northern Paiute, Shoshone, and Southern Paiute. While Anderson (2011) does not find this trait anywhere in the Pueblos (specifically Acoma and Arizona Tewa), and, while he does not mention Yuma or Shoshone, he does agree with Sherzer (1976) on Southern and Northern Paiute. This feature is possibly

reconstructed for Proto-Uto-Aztecan, although it could may actually be **n* (Campbell 1997:136, Langacker 1977). This feature could have entered through Hopi, but there are many nearby non-Puebloan neighboring languages which are possible sources[28] and Anderson (2011) finds the velar nasal in ~50% of the languages in his sample, which suggests that independent innovation is a strong possibility. There are so many other strong possibilities for this sound's appearance in the Pueblos besides areal diffusion that I cannot consider this an areal trait, although it is possibly a very very weak areal trait of the Greater Southwest.

(15) At least 1 rhotic: Mixed

This feature is found in Hopi, Keresan (Acoma), Tewa (Santa Clara), and Tiwa (Isleta) and some varieties of Southern Paiute, Comanche, and all Yuman languages (Sherzer 1976:142). Stubbs (2011:12) does not specify the Proto-Uto-Aztecan medial liquid and simply lists it as *-L-, because of the controversy surrounding liquids, where some linguists reconstruct **n* others reconstruct **r* so that Hopi's rhotic could be an inherited feature. Sherzer (1976:142) suggests that Hopi may have gained its rhotic from contact with the Yuman languages (most likely the Upland Yuman languages because of proximity), which presupposes that Proto-Uto-Aztecan did not have a rhotic, and that Santa Clara Tewa and Isleta possibly gained their rhotic from contact with Keresan. It is also possible that Santa Clara Tewa and Isleta gained their rhotic from Hopi. If rhotics are not a genetic feature of Uto-Aztecan, then Yuman languages are a very likely source for the rhotic in Hopi so that it cannot be considered a Puebloan areal trait. Rhotics in Santa Clara Tewa and Isleta could be evidence of areal diffusion since Yuman languages are

[28] Anderson (2011) adds Ute and Chemehuevi to the list.

much less likely sources than Keresan or Hopi. Therefore, the use of rhotics in Santa Clara Tewa and Isleta may very well be a result of Puebloan areal diffusion.

(16) Voiceless r: Weak Puebloan areal trait

The "voiceless r" (Sherzer 1976:142) is found in Hopi and Keresan (Acoma) and outside of the Pueblos in nearby Shoshone, Southern Paiute, and Comanche (Sherzer 1976). Maddieson (1984) finds voiceless rhotics in <3% making them extremely rare and not likely innovated. Because Shoshone, Southern Paiute, and Comanche are Northern Uto-Aztecan languages, this feature could be retained from Proto-Northern-Uto-Aztecan. The aforementioned languages are also Numic languages so that the feature could have diffused into Hopi from Numic languages. However, because of proximity, Southern Paiute and Comanche are reasonable possible sources for this feature in Keresan and Hopi, making this a weak Puebloan areal trait.

Table 3: **Morphosyntax**

Feature	Areal Status
Pronominal plural	No
Pronominal dual	See (35)
Nominal incorporation	No

(17) Pronominal plural: Not a Puebloan areal trait

Languages with pronominal plural are ones which mark number pronouns based on the plurality of their referent (i.e. English 'I' vs 'we'). This feature is considered a whole areal trait

of the Southwest, Great Basin, California, and Plains (Sherzer 1976). Because of its distribution this feature is not an areal feature of the Pueblos. Nor can it be considered an areal feature of a larger area because Sherzer (1976) includes many northern Californian languages, such as Yurok, Hupa, Yukian, and others which cannot be reasonably areally linked to the Southwest, Pueblos, Plains and Great Basin.

(18) Pronominal dual:

Pronominal dual is the marking of pronouns for dual number. This feature is found in Zuni, Navajo, Keresan (Acoma), and Taos and outside of the Pueblos in the other Apachean languages, Kiowa, Comanche, Tonkawa, Pawnee, and is considered a whole areal trait of the Great Basin (Sherzer 1976). I will discuss this trait more in (35) because it is part of the larger feature of dual marking.

(19) Nominal incorporation: Not a Puebloan areal trait

Nominal incorporation is the incorporation of nouns into verbs to semantically alter the verb. This feature is found in Hopi, Zuni, Keresan (Acoma),[29] and Taos and outside of the Pueblos in Walapai, Pawnee, Wichita, and Southern Paiute. Sherzer (1976) says nominal incorporation is a family trait of Azteco-Tanoan, however, this family is not widely accepted and often shows diffusional rather than genetic effects. It is also possible that this feature is a genetic trait of both families. Nominal incorporation is common cross-linguistically, especially in the

[29] It is not productive in Acoma (Sherzer 1976:146)

Americas. Therefore, this feature cannot be considered an areal trait of the Pueblo region nor a possible larger region.

Table 4: **Possible Puebloan Areal Traits Found in Sherzer (1976)**

Trait
3 stop series
Retroflex sounds
c/č
ɬ
At least 1 rhotic

As I mentioned in the introduction of this section, I do not analyze all of the features that Sherzer (1976) finds shared across the Puebloan languages because Bereznak (1995) also discusses some of these features and she offers a more complete analysis. Of the features that I do analyze I only find five, out of nineteen and only two can be considered not weak. As I will show in 4.1.3.2., this dearth of possible areal features has more to do with Sherzer (1976)'s fixed list. Because Sherzer (1976) uses a survey method to analyze each culture area, he misses many more area specific features, which Bereznak (1995) accounts for. As I will show in 4.1.3.2., Bereznak (1995)'s examination yields many more possible areal features of the Pueblos.

4.1.3.2. Features Examined by Bereznak (1995)

In this section I evaluate some of the possible areal traits examined by Bereznak (1995). I leave out some traits for two reasons: 1. As with Sherzer (1976), some of the traits have no evidence

suggesting they should be considered as possible areal traits, and 2. Some of Bereznak (1995)'s and Sherzer (1976)'s possible areal traits overlap and I discussed them in 4.1.3.1., including Bereznak (1995)'s analysis of the traits, so there is no reason to discuss them twice. I have also elected to leave out some of Bereznak (1995)'s ethnolinguistic features as possible areal traits because they fall under the realm of culture areal traits, as with common directions and some shared ceremonial language features, or pure lexical borrowings, such as other shared or diffused features of ceremonial language, which, as I discussed in 2.2.1.1., non-collectively offer very little in affecting the status of possible linguistic areas. The ethnolinguistic features I leave out are also not seen by Bereznak as being possible Puebloan areal features.

In this section I discuss the consonantal features analyzed in Bereznak (1995).

Table 5: **Consonants**

Feature	Areal Status
p	No
t	No
k	No
ʔ	No
s	No
h	No
m	No
n	No
w	No

Feature	Areal Status
ts	Yes
Aspirated consonants	Yes
Glottalized consonants	Yes
t^j	Yes
k^j	No
h^j	Maybe
Non-alveolar sibilants	No
Absence of voiced stops	Yes

(20) p, t, k, s, h, n, m, w: Not a Puebloan areal trait

These consonants are found in all of the Puebloan languages, however they are not areal trait candidates because all of them are very common cross-linguistically. Most of them are found in about 90% of the worlds languages with /h/ being the rarest and still being found in 63% of the worlds languages (Bereznak 1995). Because these are all so cross-linguistically common their source in all of the languages is most likely a mix between genetic heritage and independent innovation.

(21) ʔ: Not a Puebloan areal trait

This sound is found in all Puebloan languages, however is it also inherited in Navajo, Hopi, and Tanoan. Cross-linguistically, it is found in about 46% of languages and only about

10% of languages in North America do not have a glottal stop (Maddieson 1984). Because of this, independent innovation if far too likely a source to consider this a Puebloan areal trait.

(22) ts: Puebloan areal trait

This affricate is found in all Puebloan languages and in 30% of the world's languages (Bereznak 1995). Tanoan, and Navajo both gained the feature through inheritance, but Bereznak (1995) says that the sound may have diffused into Zuni. It is also possible that it diffused into Keresan, but Keresan has a full set of dental affricates (ts, ʧ, and tʂ)[30] and the affricate is reconstructed for Proto-Keresan. This means that while it is possible that the sound was diffused into Keresan, Keresan also has all of the corresponding voiceless stops and fricatives (p, t, k, s, ʃ, ʂ) and glottalized and aspirated forms of all of these stops, fricatives and affricates suggesting that the affricate is far more likely a native sound of Keresan. /ts/ is a Puebloan areal trait because it is found throughout the Pueblos, although its cross-linguistic frequency makes chance innovation a possibility. Bereznak (1995) makes no mention of languages outside of the Pueblos having this sound, because she generally discusses features found outside of the Pueblos I take this to mean that this sound is not in any of the surrounding languages and is therefore diagnostic. While it is possible that this feature was not diffused into any of the Puebloan languages, it is still found in all Puebloan languages, so that linguists should expect this feature in any language which may be posited to be Puebloan.[31]

[30] Bereznak (1995) calls these dental but I believe that she is referring to their shared coronal feature.

[31] It is necessary to note that languages which lack diagnostic traits of an area are not automatically excluded from the area, however, diagnostic traits can be good starting places for examining languages which may be apart of a linguistic area.

(23) Aspirated consonants: Puebloan areal trait

This feature is found in all Tanoan languages, except Jemez, Acoma, Navajo, and Zuni (Bereznak 1995). Tanoan and Navajo probably inherited the feature because aspirated consonants are reconstructed for Proto-Athapaskan and Proto-Kiowa-Tanoan (Bereznak 1995). Zuni may have gained this feature through contact since it does not possess a full series of aspirated stops. That is to say not all of the aspirated stops have unaspirated counterparts and vice versa. /p/ and /t/ are always unaspirated whereas /k/ is always unaspirated (Bereznak 1995). All of Zuni's aspirated consonants can be found in both Navajo and Acoma (Bereznak 1995). The Toreva variety of Hopi has phonemic pre-aspirated stops. Bereznak (1995) analyzes this as showing that all languages in the Pueblos, except Jemez, have some kind of aspiration.

I do not believe that the pre-aspiration used in the Toreva variety of Hopi can be generalized to the entire language. The loss of aspiration in Jemez and the lack of it in most varieties of Hopi, could be attributed to their geographic location. In the case of Jemez, which currently lies in the center of the Pueblo region, their prehistoric location was probably not in its current position and Ford, Schoeder & Peckham (1972) place them in the upper San Juan River Basin, the northeast periphery of the Pueblo region. Hopi also geographically lies on the periphery of the Pueblo region and many of its varieties may not have gained consonantal aspiration because of their vicinity to Yuman languages, which also lack aspiration. This feature can still be considered an areal trait of the Pueblo region. It is not cross-linguistically common, it probably diffused into Zuni, none of the surrounding languages have phonemic aspirated consonants, and areal pressure could have led to the conservation of this feature in most Puebloan languages. Because this feature is not found phonemically in Great Basin, Arapaho,

Cheyenne, Caddoan, Tonkawa, or Yuman it can be called a diagnostic areal trait (Bereznak 1995).

(24) Glottalized consonants: Puebloan areal trait

Glottalized consonants are found in all Tanoan languages, Keresan,[32] and Navajo. Phonetically they also exist in Zuni, however, Bereznak (1995) cites Newman (1965) as analyzing them phonemically as consonant clusters consisting of stop + glottal sequences. This presents a major problem. If they are inherently stop + glottal sequences, then it appears more likely that the clusters have simply gone through a sort of reduction. This is an area which requires further research to determine if Zuni glottalized consonants can truly be attributed to diffusion. This feature has been reconstructed for both Proto-Athapaskan and Proto-Kiowa-Tanoan so that it is inherited into Tanoan languages and Navajo. Keresan has a full series of glottalized stops and affricates (i.e. all glottalized stops have non-glottalized counterparts) suggesting that they are native. It is possible, though, that they were asymmetrically diffused into Proto-Keresan,[33] just like they possibly were in Zuni, but that Proto-Keresan speakers innovated glottalized consonants to make their consonant inventory more symmetrical.

Maddieson (1984) only finds glottalized consonants in ~16% of languages so that independent development is not likely. Bereznak (1995) says that glottalized nasals and sonorants are conditioned by the D-effect (cf. Bereznak 1995:85), which is found throughout Athapaskan. The D-effect describes a process of glottalization when an D-class verb begins with

[32] I do not mark this with an asterisk because other sources agree that this is a feature of Keresan and not just Acoma.

[33] i.e. not all non-glottalized consonants had glottalized counterparts and/or vice versa.

m, *n*, or *y* and is preceded by a prefix ending in a consonant. Although the D-effect is inherited, Navajo is the only Athapaskan language to glottalize sonorants with this morphophonemic process (Bereznak 1995). It is likely that glottalized sonorants were innovated through contact with Puebloan languages. Bereznak (1995) says that this may also hold true for glottalized semivowels in Navajo, however, she does not offer any argument or evidence for this. Sherzer (1976) agrees that contact with Acoma could have led to the development of glottalized nasals and semivowels. This feature is not limited to the Pueblos, it is found in Tonkawa, Caddo, and Washo, which weakens it as a possible areal trait. This feature, though, can be seen as an areal trait with a possibility of strengthening depending on how Zuni's glottalized consonants are viewed. It does seem likely, though that this feature diffused into one or more Puebloan languages so that it is still an areal trait. Because this feature is found in neighboring Tonkawa and Caddo, it cannot be said to be a strongly diagnostic trait, but it does still help delineate the Pueblo linguistic area.

(25) tʲ: Strong Puebloan areal trait

tʲ is found in Keresan, Jemez, and a few kinship terms in Santa Clara Tewa (Bereznak 1995). This sound is not reconstructed for Proto-Kiowa-Tanoan (Bereznak 1995) and Maddieson (1984:38) finds palatalized dentals in only 6% of languages surveyed making it likely a result of diffusion in Jemez and Santa Clara Tewa. tʲ is also not found in languages surrounding the Pueblos[34] so that it likely diffused from Keresan into Jemez and, to a lesser extent, Santa Clara Tewa (Bereznak 1995).

[34] i.e. Upland Yuman languages, Tonkawa, Tümpisa Shoshone, and Chemehuevi

(26) kʲ: Not a Puebloan areal trait

kʲ is found in Arizona Tewa, Hopi, and allophonically in Zuni and is not reconstructed for Proto-Kiowa-Tanoan nor Proto-Uto-Aztecan. Maddieson (1984) only finds palatalized velars in ~4% of languages surveyed making chance innovation extremely unlikely. The sound is reconstructed in Proto-Yuman, however, and likely diffused from Upland Yuman languages into Hopi. This diffusion may have also led to Hopi's development of ŋʲ (Bereznak 1995), which Maddieson (1984) only finds in two other surveyed languages, Irish and Lakkia. Kroskrity (1993) argues that Hopi probably initiated development of palatalized /k/ in Arizona Tewa, but that the Tanoan language also innovated forms which are also aspirated and glottalized. Despite that, Zuni only shows kʲ allophonically, this suggests that the sound has spread eastward and has simply been incompletely incorporated into Zuni. Because this trait almost definitely spread from Yuman it is not a Puebloan areal trait. However, it does show a connection between the western Pueblos and the Southwest.

(27) hʲ: Possible Puebloan areal trait

This feature is found in Arizona Tewa and allophonically in Navajo (Bereznak 1995). I have not been able to find data on the frequency of this sound and Bereznak (1995) says that its absence in Maddieson (1984)'s inventory of sounds shows extreme rarity, but this seems to be speculation. No other Tanoan language has this sound and h is not palatalized in any other Athapaskan language. Allophonic development in Navajo could be due to coarticulatory factors. Navajo has both /j/ and /i/ which could cause /hi-/ or /hj-/ to become [hʲ] especially if the next

sound requires a more open mouth. Because there is no data on the cross-linguistic frequency of this feature, chance innovation cannot be eliminated as a possibility, however, diffusion does seem to be a possible source, more so for Arizona Tewa than Navajo.

(28) Non-alveolar sibilants: Not a Puebloan areal trait

This feature is found throughout the Pueblo region with Zuni, Keresan, Jemez, and Navajo showing ʃ, Keresan showing ʂ, and Hopi showing ʐ̩ (Bereznak 1995). This feature is not inherited in Hopi or Jemez so that diffusion is a possibility (Bereznak 1995). ʃ is found in 46% of languages surveyed by Maddieson (1984), ʂ is found in 5%, and ʐ̩ in <4%. Upland Yuman languages also have ʐ̩ so that Hopi could have gained the sound through contact with them (Bereznak 1995), or through analogy with Keresan ʂ, although the former seems much more likely because it would be a direct borrowing. Although Bereznak (1995) makes no mention of the appearance of ʂ in Keresan, it is also possible that Keresan actually gained ʂ from analogy with Hopi ʐ̩. As a whole, non-alveolar sibilants are not an areal trait of the Pueblos because chance innovation is a very likely cause for the development of ʃ. ʐ̩ probably developed from contact with Upland Yuman languages, which also may have led to the development of ʂ in Keresan, although this is speculation.

(29) Absence of voiced stops: Weak areal trait

Voiced stops are mostly absent among Puebloan languages (Bereznak 1995). Langacker (1977) reconstructs Proto-Uto-Aztecan as lacking voiced stops, Bereznak (1995) cites Miller (1965) as reconstructing only voiceless stops for Proto-Keresan, and Bereznak (1995) cites

Krauss & Leer (1976) as reconstructing only voiceless stops for Proto-Athapaskan. Among Puebloan languages, only Proto-Kiowa-Tanoan contained voiced stops (Hale 1967),[35] which Tanoan languages have lost or shifted to varying degrees (Hale 1967), but which Kiowa has retained (Bereznak 1995). Bereznak (1995) attributes this shift and loss among Tanoan languages to contact with Puebloan languages and she notes, "it is significant that the only change to affect all of the Tanoan languages, but not Kiowa, resulted in the Tanoan languages becoming more like other Pueblo languages" (Bereznak 1995:90). Maddieson (1984) does find voiced stops occurring in 67% of languages surveyed and Maddieson (2011e) finds voicing contrasts in plosives very common among the languages surrounding the Pueblos. Absence of voiceless stops is also found in surrounding non-Puebloan languages: Tonkawa, the Yuman languages, and most of the Great Basin languages. While Siouan languages show similar voiceless stops, possibly suggesting them as a source, there has been little evidence of direct contact between Tanoan and Siouan speakers, with most goods arriving through intermediaries such as Comanche, Ute, Apache, and Kiowa speakers (Ford 1983:714, Parsons 1939:1029). Because other non-Puebloan languages, such as Yuman and Tonkawa, which are known to have had direct contact with Tanoan speakers, this is only a weak Puebloan areal trait.

Table 6: **Phonological Rules**

Feature	Areal status
Loss of final /n/	No

[35] Sherzer (1976) and Maddieson (1984) identify Acoma as having voiced stops, but Bereznak (1995) notes that Miller & Davis (1963:313) use 'b', 'd', and 'g' to signify voiceless, unaspirated stops and that voiced stops only appear in certain words borrowed into Keresan.

Feature	Areal status
V & $C_{[sonorant, +vce]}$ > [-vce] / _#	No
V: > V / _CC	No
V > ø / _#	Yes

(30) Loss of final /n/: Not a Puebloan areal trait

This phonological rule (n > ø /_#) is found in Zuni and Acoma (Bereznak 1995). In Zuni this rule applies to the end of utterances, while in Acoma this rule applies to the ends of words and before consonants (Bereznak 1995). Bereznak (1995) says that Zuni's rule is essentially a subset of the rule in Acoma, which applies more generally to several other consonants, which shows diffusion from Acoma to Zuni. I do not agree with this position. Campbell, Kaufman & Smith-Stark (1986:535) warn against assuming that languages with a more ingrained feature must be the source of diffusion. It is possible that Zuni diffused the rule into Acoma, which then expanded the rule overtime. There is also a problem in that Zuni has fixed initial stress (Goedemans & van der Hulst 2011) making it very likely for final sounds to drop, as they did in the Germanic family. My research has not found information on stress rules in Acoma. Bereznak (1995) offers no convincing evidence of this rule being diffused within the Pueblos, nor have I found any additional evidence in favor of this feature as an areal trait. Therefore, I must conclude that, at least for now, this is not an areal trait of the Pueblo region.

(31) V or $C_{[sonorant, +vce]}$ > [-vce] / _#: Not a Puebloan areal trait, possibly evident of Greater Southwest

This rule is found in Hopi, Zuni, and Acoma (Bereznak 1995). Devoiced sonorants are phonemic in Hopi, but only occur word-finally[36] and in Zuni vowels are devoiced utterance-finally and sonorants are often devoiced word-finally when the following vowel is dropped (Bereznak 1995). In Acoma the specific rules are V > [-vce] / _# or $\_C_{[-vce]}$ and $C_{[sonorant]}$ > [-vce] / $\_V_{[-vce]}$# (Bereznak 1995). There does appear to be partial spreading of this trait to Picurís, which partially devoices /i/ word-finally (Bereznak 1995). This feature is not common cross-linguistically, but is found outside of the Pueblos in Numic, Comanche, Cheyenne, and Wichita. I agree with Bereznak (1995)'s conclusion that this feature is not an areal trait of the Pueblos but it could be an areal trait of a much larger area. This feature also adds evidence to show that the western Pueblos may be more tightly bound to each other than they are to the eastern Pueblos, which, of course, is not to say that they are not connected to the eastern Pueblos at all.

(32) V: > V / _CC: Not a Puebloan areal trait

This feature is found in Hopi and Zuni, but, as Bereznak (1995) says, its cross-linguistic frequency suggests that chance innovation is too likely to consider this an areal trait.

(33) V > ø / _#: Puebloan areal trait

This feature is found in Hopi, Taos and Zuni, and Bereznak (1995) posits that this may, in fact, be an extension of the devoicing of final vowels in these languages. The rules for final

[36] Phonemes can have distributional limits. For example, /ŋ/ is considered a separate phoneme in English, however, it can only occur syllable finally.

vowel loss in Zuni and Taos are rather different from each other. In Zuni, word-final vowel loss is generally conditioned by the next word beginning with h or ʔ, whereas Taos generally loses word final ã and u (Bereznak 1995). Hopi and Zuni share a morphologically conditioned rule where "minor categories" (Bereznak 1995:100) often drop their final vowel. For Zuni, this category includes adverbial particles and word-final suffixes (Newman 1965:27-8, as cited in Bereznak 1995:100) and in Hopi this category includes word-final suffixes, pronouns, postpositions, and modal particles (Jeanne 1982:286, as cited in Bereznak 1995:100). I agree with Bereznak (1995)'s assertion that the Hopi and Zuni rules for final vowel deletion are sufficiently similar to suggest areal trait status. I cannot comment on its relative strength, though, because I have no evidence for the cross-linguistic frequency of this feature and Goedemans & van der Hulst (2011) classify Zuni as having fixed initial stress, making final sounds more likely to be lost, so that chance innovation is another possible source.

Table 7: **Verb Morphology**

Feature	Areal Status
Pronominal verb prefixes	No
Dual number	No
Verbal number suppletion and shared suppletive words	Yes
Marking of verbal arguments solely with independent pronouns	Maybe

Feature	Areal Status
Aspect marking with suffixes	No
-ti aspectual suffix	Yes
Tense marking suffixes	No
ʔas	Yes
Switch reference	No
Shared subordinate affixes	Yes
Shared conditional markers	Yes

(34) Pronominal verb prefixes: Not a Puebloan areal trait

This feature is found in Acoma, Apachean languages, and Tanoan languages (Bereznak 1995). Kiowa uses pronominal verb prefixes and they have been reconstructed for Proto-Athapaskan so that genetic lineage likely explains their appearance in Tanoan and Apachean languages. Tonkawa and Yuman languages also have this feature, which suggests that it could be a trait of a larger area, but Langacker (1977) says that noun-like affixes tend to precede verbs in verb-final languages. Considering that out of the languages surrounding within and surrounding the Pueblos all either have SOV word order[37] or non-dominant word order[38] (Dryer 2011a), it is not surprising that this feature is found in the Puebloan and surrounding languages. This feature is also widespread across North America (Dryer 2011a), so that it is not an areal trait of a larger area either.

[37] This includes: Navajo, Hopi, Zuni, Western Apache, Walapai, Maricopa, Comanche, Kiowa, Shoshone, Northern Paiute, Washo, Tümpisha Shoshone, and Mono (Dryer 2011a).

[38] This includes Keresan, Tiwa, Ute, Wichita, Tonkawa, O'odham, and Chemehuevi (Dryer 2011a).

(35) Dual number: Not a Puebloan areal trait, possibly evident of Greater Southwest

Tanoan, Acoma, and Navajo mark dual verbal number with pronominal prefixes, Zuni and Navajo use independent pronouns, and Hopi marks dual on nouns (Bereznak 1995). Dual number is also found in Kiowa so that it is probably a family trait of Kiowa-Tanoan (Bereznak 1995), but Langacker (1977) does not reconstruct dual for Proto-Uto-Aztecan. Dual number can be found in some Northern Uto-Aztecan languages, but because Takic lacks the feature it cannot be considered an inherited trait of Northern Uto-Aztecan (Bereznak 1995). Dual number is not common cross-linguistically suggesting that Hopi may have gained the feature through diffusion rather than chance innovation (Bereznak 1995). Bereznak (1995) also notes that the fact that dual is a marginal category in Zuni, marked only in third person independent pronouns, is evidence for diffusion as its source in the language. Bereznak (1995) also recognizes a problem with Zuni being an isolate and, therefore, not comparable to any other known language. Dual number is present in every Pueblo language and was likely diffused into at least one, however, it also extends outside of the region in languages such as Tonkawa (Hoijer 1946b as cited in Bereznak 1995), Numic languages (Dayley 1989, Press 1979 as cited in Bereznak 1995), and Caddoan (Chafe 1979 as cited in Bereznak 1995). It is especially worth noting that Tonkawa marks dual with both independent pronouns and pronominal affixes (Hoijer 1946b as cited in Bereznak 1995). Because this feature appears in languages outside of the area in languages which are reasonably possible sources, it cannot be considered a Puebloan areal trait. However, this feature does more strongly link the Pueblos to languages to the north and east so that it could be an areal trait of a larger area.

(36) Verbal number suppletion and shared suppletive semantic fields: Puebloan areal trait

Verbal number suppletion refers to breaks in normal verbal paradigms for conjugating for number.[39] While English does not have strict verbal number suppletion, examples of verbal suppletion in English are 'be' (am, is, are, was, were, being, been) and 'go' (go, goes, went, going, gone). Bereznak (1995:106-7) shows examples of this feature in all Puebloan languages except Tanoan. However, she cites Trager (1946:202) as finding examples of verbal number suppletion in Tanoan. While this feature is found in Numic languages to the north and east and other Uto-Aztecan languages to the south and west, Haugen & Everdell (2013) find this feature across Uto-Aztecan and reconstructable for Proto-Uto-Aztecan. Because of this, Hopi almost definitely inherited the feature and possibly diffused the trait to other Puebloan languages. The suppletive words in Puebloan languages line up quite well with Uto-Aztecan verbal number suppletion, further suggesting that the paradigm was gained through analogy with Hopi suppletion.

Hopi: (all forms taken from Hill & Black 1998:866 unless otherwise noted

pitu 'arrive SG/DL', *öki* 'arrive PL'

yama(k-) 'go out SG/DL', *nönga* 'go out PL'

niina 'kill SG/DL', *qöya* 'kill PL'

puuwi 'sleep SG/DL', *okya* 'sleep PL'

Zuni: (Bereznak 1995:106-7)

[39] For a variety of reasons, no linguist has put forth a general definition for suppletion so that this definition should not be taken as an official one, but instead as a basic one which works for the purpose of this thesis. For more discussion on verbal suppletion cf. Veselinova (2006).

ʔala ‘sleep SG’, *ya:tela* ‘sleep PL’

ʔayna ‘kill SG’, *łata* ‘kill PL’

Acoma: (Bereznak 1995:107)

-jaʔáts’iN ‘arrive SG’, *âaʔáts’iN* ‘arrive DL’, *-jértʸuP* ‘arrive PL’

û:níM ‘know SG’, *âitṣuuníM* ‘know PL’

Navajo: (Bereznak 1995:107)

-u ‘go SG’, *ʔááž* ‘go DL’, *-(t)kʰai* ‘go PL’

-lóoz ‘lead SG’, *-ʔeež* ‘lead PL’

I only include the suppletive verbs in Hopi which either directly or indirectly align with the suppletive verbs of the other Puebloan languages (larger list in Haugen & Everdell 2013). Yuman languages do not follow the same pattern of suppletion (Haugen & Everdell 2013) so that it is largely contained within the Pueblos, Seri, an isolate, does appear to follow a similar pattern of suppletion, it has:

Seri:[40] (all forms taken from Marlett 2011)

√*ap* ‘stand SG’, √*oii*/√*ooyoj*[41] ‘stand PL’

√*ah* ‘say, put FL[42] SG”, √*aii* ‘say, put FL PL’

√*afp* ‘arrive SG’, √*azcam* ‘arrive PL’

[40] Marlett (2011) uses the √ to indicate the beginning of a root or stem.

[41] Marlett (2011:622) notes that these two forms are used for slightly different contexts, but, for the purpose of this section, these are both suppletive forms of the singular form

[42] Marlett (2011:20) uses this symbol to indicate “flexible, out of sight, or default.”

√*aaitom* ‘speak SG’, √*ooza* ‘speak PL’

√*ee* ‘say SG’, √*ooza*[43] ‘say PL’

√*azquim* ‘enter SG’, √*oizct* ‘enter PL’

√*iih* ‘be (flexible item) SG’, √*oii* ‘be (flexible item) PL’

√*iij* ‘sit SG’, √*ahca*/√*ooxalca*[44] ‘sit PL’

√*isil* ‘small SG’, √*ixt*[45] ‘small PL’

√*ooit* ‘arrive (in idioms) SG’, √*paailx*/√*eme*[46] ‘arrive (in idioms) PL’

√*oom* ‘lie SG’, √*ooitoj* ‘lie PL’

√*aazi* ‘carry SG’, √*oon*[47] ‘carry PL’

√*ácatx* ‘release SG’, √*aalajc* ‘release PL’

√*acozxot* ‘give SG’, √*aconec* ‘give PL’

√*Cactim* ‘use, touch SG’, √*Canloj* ‘use, touch PL’

√*yaai* ‘go to SG’, √*oziit* ‘go to PL’

While the semantic fields in Seri with verbal number suppletion seem to suggest that the Pueblos’ suppletion extends into the Southwest, since Seri is not Uto-Aztecan. However, Yaqui,

[43] Marlett (2011:622) says that the plural form of ‘speak’ and ‘say’ is the same.

[44] As with ‘stand’, Marlett (2011:622) finds slight differences in the use of these forms but for the purposes of this thesis they are suppletive forms of the singular.

[45] Marlett (2011:622) notes that this form is used alongside √*izil* although the distribution is not defined and he only notes the √*izil* form in a footnote so I will leave it out as well.

[46] Marlett (2011:622) finds these forms used in different idioms, but, because they are both suppletive, their semantic differences do not matter as they are both considered plural forms of the given singular.

[47] This stem can either refer to a singular subject carrying multiple objects or multiple subjects (Marlett 2011:622).

Mayo, and other Uto-Aztecan languages lie are also found in the surrounding area and their suppletive semantic fields align just as well, as do most other Uto-Aztecan languages.

Yaqui: (all forms taken from Haugen & Everdell 2013 unless otherwise noted)

yepsa 'arrive SG', *yaha* 'arrive PL'

kivacha 'bring in SG', *kiima* 'bring in PL'

muuke 'die SG', *koko* 'die PL'

kivake 'enter SG', *kiimu* 'enter PL'

weche 'fall down SG', *watte* 'fall down PL'

yehte 'get up SG', *hoote* 'get up PL'

sii 'go SG', *saha* 'go PL' (Langacker 1977:127)

siime 'go/leave SG', *saka* 'go/leave PL'

weye 'go/walk SG', *kaate* 'go/walk PL'

me'a 'kill SG', *sua* 'kill PL'

vo'ote 'lying down (present) SG', *to'ote* 'lying down (present) PL'

yecha 'put down/place SG', *hoa* 'put down/place PL'

vuite 'run SG', *tenne* 'run PL'

yeesa 'sit down (present) SG', *hooye* 'sit down (present) PL'

kecha 'stand (s.t.) up SG', *ha'abwa* 'stand (s.t.) up PL'

kikte 'stand up SG', *hapte* 'stand up PL'

weama 'walk around SG', *rehte* 'walk around PL'

Seri does appear to have suppletion in many of the same and similar semantic fields such as, 'arrive' and 'go to'. However, both of these forms have also been attested in Yaqui and other surrounding Uto-Aztecan languages (Haugen & Everdell 2013), therefore, this feature's appearance in Seri is not necessarily due to Puebloan influence. Despite its existence in most Uto-Aztecan languages[48] and the fact that Seri is not geographically contiguous with the Pueblos, this feature's spread across the Puebloan languages does define the area and verbal number suppletion is uncommon enough that chance is not a likely explanation (Veselinova 2006). Dixon (1997:22) places suppletion in his list of "grammatical phenomena that are very unlikely to be borrowed, under any circumstances", however, Dixon (1997) offers no evidence for his position and it does seem possible that suppletion paradigms could be borrowed, i.e. the Puebloan languages did not borrow Hopi's suppletive words, only the verbal number suppletion as a structural feature and some of the verbs which Hopi makes suppletive. This would essentially be a morphological calque, similar to the creation of the *of*-possessive construction in English through analogy with French *de*. Therefore this can be considered a diagnostic Puebloan areal trait for non-Uto-Aztecan languages, although its relative strength can be debated because so little is understood about suppletion.

(37) Marking of verbal arguments solely with independent pronouns: Possible Puebloan areal trait

Hopi and Zuni solely use independent pronouns to mark verbal arguments (Bereznak 1995). Langacker (1977) shows that this is a retained feature for Hopi because pronominal

[48] Nahuatl and Pipil have lost most of the suppletion paradigms found across the rest of Uto-Aztecan.

prefixes, which occur in some Uto-Aztecan languages, are innovative. Zuni's isolate status makes it difficult to determine if genetics or diffusion was the major reason for the feature's appearance. It is worth noting that this feature sets Hopi and Zuni apart from all other Puebloan languages and the nearby Yuman languages. Therefore, this feature can only be considered a possible areal trait until more internal reconstruction can be done on Zuni which sheds light on this feature origin in the language.

(38) Aspect marking with suffixes: Not a Puebloan areal trait

Hopi, Taos, Zuni, and Acoma mark aspect through suffixes (Bereznak 1995). It is also found in Kiowa and reconstructed for Proto-Uto-Aztecan, suggesting hereditary origin for Taos and Hopi (Bereznak 1995). This feature cannot be considered a Puebloan areal trait because it is found throughout the Southwest, nor can it be evidence of a larger area because tense-aspect suffixes are very common throughout the Americas (Dryer 2011b).

(39) -*ti* aspectual suffix: Puebloan areal trait

In Hopi, this suffix indicates the inchoative and in Zuni it indicates the inchoative and inceptive. In Hopi, the inceptive is marked by the suffix -*va*. Inchoative suffixes are not reconstructed for Proto-Uto-Aztecan (Langacker 1977), however both Langacker (1977) and Haugen (2009) reconstruct the Proto-Uto-Aztecan inceptive suffix *-*tu* passive suffix *-*ti*-*wa* where -*ti* means 'be'. This feature may be a result of diffusion in Hopi because Proto-Uto-Aztecan **u* > Hopi *o* (Stubbs 2011:12) so that -*to* would be the predicted reflex of Proto-Uto-Aztecan *-*tu* not -*ti*. Classical Nahuatl shows -*ti* as its reflex of Proto-Uto-Aztecan *-*tu*,

however, Proto-Uto-Aztecan **u* > Classical Nahuatl *i*. Zuni's classification as an isolate makes it difficult to say whether it is an inherited feature. Navajo has the inceptive prefix *ti-* which is the same as the Zuni inceptive suffix, however Slave uses a similar prefix *te-* (Rice 1989 as cited in Bereznak 1995) and Chiricahua Apache shows *ti-* (Hoijer 1946a as cited in Bereznak 1995) suggesting that Navajo inherited this prefix. Although this feature may not have been diffused into Hopi, Zuni, or Navajo, areal pressure may have played a role in retaining the affix in these languages, or areal influence could have caused a change in the suffix's vowel. It can, therefore, be considered an areal trait of the Pueblos.

(40) Tense marking suffixes: Not a Puebloan areal trait

These are present in Hopi, Zuni, and the Tanoan languages (Bereznak 1995). This feature is genetic for Tanoan and Hopi because it is found in Kiowa and has been reconstructed for Proto-Uto-Aztecan (Bereznak 1995). Tense marking suffixes are found in 59% of the languages surveyed in Dryer (2011b) and are very commonly found throughout the Americas, therefore this cannot be an areal trait of the Pueblos, nor a larger linguistic area.

(41) *ʔas*: Strong Puebloan areal trait

This particle is found in Navajo and Hopi (Bereznak 1995). In Navajo it means 'scornful disbelief' (Young & Morgan 1980:59 as cited in Bereznak 1995), while in Hopi it has many meanings including 'past', 'uncontinued past', or, more frequently, as a modal component meaning 'unfulfilled intention' (Steele 1973:14-5 as cited in Bereznak 1995). Bereznak (1995) cites Steele (1973) as arguing that *ʔas* derives from Proto-Uto-Aztecan **sa*, which essentially

means intentive. While the particle is inherited in Hopi, Bereznak (1995) does not find any cognates of Navajo *ʔas* in other Athapaskan languages, although some have particles indicating disbelief (Keren Rice p.c., as cited in Bereznak 1995). It is therefore conceivable that Hopi *ʔas* diffused into Navajo as a disbelief particle, which I have said is found in other Athapaskan languages. The semantic jump from Hopi *ʔas* to Navajo *ʔas* is not a great one, from Hopi indicating the failure of an intended event's completion or occurrence to Navajo indicating disbelief at the occurrence of such uncompleted events. This particle's appearance in Navajo is very likely the result of diffusion from Hopi and can, therefore, be considered a strong Puebloan areal trait.

(42) Switch reference: Not a Puebloan areal trait, possibly evident of Greater Southwest

This feature is found in Hopi and Zuni and is found in other Northern Uto-Aztecan languages such as Tümpisa Shoshone (Dayley 1989, as cited in Bereznak 1995) and Comanche (Charney 1993) and in the Yuman languages, which are also SOV (Jacobsen 1983). Because of this it is probably inherited in Hopi. Jacobsen (1983:172-3) finds a clustering of this feature in Southwest and Great Basin languages suggesting that, while it is not a Puebloan areal trait, it may reflect a larger area.

(43) Shared subordinate affixes: Strong Puebloan areal trait

Bereznak (1995) posits that the Acoma and Zuni subordinate affixes *-iši* and *nišši* (respectively) could be a result of diffusion. Although I have nothing to add to Bereznak (1995)'s evidence I do question her analysis. Bereznak (1995)'s major evidence for the areal status of this

feature is their phonetic similarity, and, while this is normally convincing I do question her discussion of the direction of diffusion. Bereznak (1995) argues that Zuni is probably the recipient of this feature because it has far fewer functions, which, as I have said before, Campbell, Kaufman & Smith-Stark (1986:535) warns against because languages can expand the functions of borrowed features and surpass the productivity of the donor language. She also argues that the fact that Zuni has several other subordinators means that Zuni would have more easily received the affix. Bereznak (1995) goes on to argue that Zuni *nišši* may have come from Acoma *-n-iši*, where *-n* is a native Zuni subordinator. This reasoning does not explain the gemination of the medial consonant, although, that is a fairly moot point. I cannot add evidence to Bereznak (1995)'s analysis of this feature, and although her analysis of the direction of diffusion is questionable, I categorize this as a strong Puebloan areal trait.

(44) Shared conditional affixes: Very Strong Puebloan areal trait

Zuni and Taos have conditional markers *ʔanna* and *ʔana* (respectively). While Kiowa *-nɔ̀* for switch reference is very similar to Taos *ʔana*, this only suggests that the affix in inherited and does not put doubt on this feature's status as a possible areal trait, especially when coupled with Arizona Tewa *-ma*. Zuni *ʔanna* conditional marker is phonologically very similar to Taos *ʔana* so that Taos is a likely source, although Bereznak (1995) again does not explain the gemination of *-n-* in Zuni. There is little evidence to suggest that Zuni developed a conditional affix so similar to Taos's through sheer chance or by any means other than diffusion, therefore, I must conclude that this is a very strong Puebloan areal trait.

Table 8: **Noun Morphology**

Feature	Areal Status
Possessive pronominal prefixes	No
Inalienably possessed nouns	No
Plural marking on nouns	Maybe

(45) Possessive pronominal prefixes: Not a Puebloan areal trait

Possessive prefixes attach to nouns in Taos, Acoma, Navajo, and Hopi (Bereznak 1995). This feature is very common among Native American languages and can be found in some languages surrounding the Pueblo area so that it cannot be considered neither an areal trait of the Pueblos, nor of a larger linguistic area.

(46) Inalienably possessed nouns: Not a Puebloan areal trait

Certain nouns always occur possessed in Hopi, Acoma, and Navajo (Bereznak 1995). Kinship terms fall in this category in all three languages and Acoma and Navajo add body part terms to this category. This feature, however, cannot be considered an areal trait of the Pueblos nor can it be considered a trait of a larger linguistic area since it is widespread across the Americas (Campbell, Kaufman & Smith-Stark 1986:549).

(47) Plural marking on nouns: Inconclusive for Pueblos and Greater Southwest

Plural marking on nouns is a requirement for all nouns in Hopi, Zuni, and Taos, while in Acoma and Navajo it is optional or reserved only for animated nouns (Bereznak 1995). While

nominal plural marking is widespread throughout Native American languages, so that it cannot be an areal trait of the Pueblos or a larger area, Bereznak (1995) posits that number marking on all nouns may have diffused into Hopi. Other Northern Uto-Aztecan languages (Bereznak 1995) and Proto-Uto-Aztecan (Langacker 1977:80) do not require number marking on all nouns so that it is possible that contact with Zuni or Taos caused this change in Hopi.

Haspelmath (2011) finds that obligatory plural marking on all nouns in found in ~46% of the languages surveyed so that it is a possible chance innovation. It is also worth noting that in the surveyed surrounding the Pueblos, Shoshone, Yaqui, and Tepehuan (which are all Uto-Aztecan languages) are the only non-Puebloan languages which require plural marking on all nouns, Northern Paiute is the only language which requires plural marking on all nouns except inanimates, Maricopa, only marks plurality on human nouns and it is optional, and all other Southwestern languages surveyed only mark plurality on human nouns and it is required (Haspelmath 2011). I do not find a pattern among the languages surveyed and Bereznak (1995)'s evidence is inconclusive so that the areal trait status of this feature in the Pueblos, and possible larger area is inconclusive.

Table 9: **Pronouns**

Feature	Areal Status
Nominal & accusative case marking in pronominal system	Yes

(48) Nominal & accusative case marking in pronominal system: Puebloan areal trait

Hopi and Zuni show this feature, which Langacker (1977:125) says is retained in Hopi. Zuni does not mark case on nouns, as Hopi does, so that Bereznak (1995) posits that the development of a pronominal case system may have developed through contact with Hopi. Bereznak (1995) admits that it is possible that case marking is native to Zuni but only survives among the language's pronouns, similar to what happened with English (Bereznak 1995). Bereznak (1995) argues that diffusion is a more likely explanation because of the lack of symmetry in the case marking system. This is to say that the subjective and objective pronouns share a common part, while a second part indicates case (see table 10). For example, Hopi 1sg subject *nuʔ*, 1sg object *nu-y* 1pl subject *itam*, 1pl object *itam-uy*.[49] Bereznak (1995) says, "the semi-segmental nature of the [Zuni] pronouns suggests that an additional part was added rather recently to the pronouns to mark case" (Bereznak 1995:124). I agree with Bereznak (1995) that this probably an instance of either areal diffusion or areal pressure so that it is a Puebloan areal trait.

[49] I split these pronouns up for clarity's sake and they are not found in Bereznak (1995:122).

Table 10: **Hopi and Zuni pronouns** (Bereznak 1995:122)

Hopi	Zuni	Case
1sg: nuʔ 2sg: um 3sg: pam 1pl: itam 2pl: uma 3pl: puma	1sg: ho:ʔo 2sg: to:ʔo 1dl: hoʔno 2dl: toʔno 3dl: ʔa:či 1pl:hoʔno 2pl: toʔno	Subject
1sg: nuy 2sg: uŋ 3sg: put 1pl: itamuy 2pl: umuy 3pl: pumuy	1sg: hom 2sg: tom 3sg: ʔan 1dl: hoʔnaʔ 2dl: toʔnaʔ 3dl: ʔa:čiyaʔ 1pl:hoʔnaʔ 2pl: toʔnaʔ 3pl: ʔa:wan	Object
Who sg: hak/hakiy pl: hakim/hakimuy	čuwa-pi	Interrogative
What sg: himu/hi:ta pl: hi:tu/hi:ta	koʔ-pi	Interrogative

Table 11: **Demonstratives**

Feature	Areal Status
Three-way demonstrative system	Yes

(49) Three-way demonstrative system: Strong Puebloan areal trait

All Puebloan languages, except Navajo, have a three-way distinction in their demonstrative pronoun system (Bereznak 1995). This is to say they distinguish ‘this’ from ‘that’ from ‘that (far)’. Langacker (1977:99) reconstructs a two-way demonstrative system of proximal-distal opposition, in Proto-Uto-Aztecan and Kiowa also only makes a two-way distinction (Watkins 1984:98, as cited in Bereznak 1995) so that Tanoan languages and Hopi appear to have developmentally converged with other Puebloan languages. Although Tonkawa is the only surrounding non-Puebloan language which also exhibits a three-way demonstrative system, I agree with Bereznak (1995:125) that this feature can still be said to be a strong areal trait of the Pueblos which defines the area as a whole.

Table 12: **Word Order and Other Morphosyntactic Features**

Feature	Areal Status
SOV basic word order	No
Other word orders	No
Reduplication indicating plurality and/or repetitive and durative aspect	No
Noun incorporation	No
-bi and *-di*	Yes
Passive prefixes and semantic foregrounding of Patient-Subjects in passive constructions	Yes
Use of an anaphor as a relativizer morpheme	Yes

(50) SOV basic word order: Not a Puebloan areal trait

Hopi, Zuni, Acoma, and Navajo all have SOV as their basic word order (Bereznak 1995). This trait has been reconstructed for both Proto-Uto-Aztecan (Langacker 1977, Bereznak 1995) and Proto-Athapaskan (Bereznak 1995) and is, therefore, probably inherited in both Hopi and Navajo. This trait is not confined to the Pueblos, appearing in Tümpisa Shoshone, Shoshone, Kiowa, Maricopa, Coahuilteco, Seri, and many other languages surrounding the Pueblos. This feature cannot be considered a possible areal trait of a larger linguistic area because this feature

is the most common word order in the world, appearing in 41% of languages in Dryer (2011a)'s survey, and, within the Americas, is only uncommon in Central America.

(51) Other word orders: Not a Puebloan areal trait

Other word order features present in the Pueblos are postpositions and pre-nominal genitives, however, these are typologically common features correlated with SOV word order (Greenberg 1966, Comrie 1989:93, Hawkins 1983:67, as cited in Bereznak 1995) and, therefore, cannot be considered Puebloan areal traits.

(52) Reduplication indicating plurality and/or repetitive and durative aspect: Not a Puebloan areal trait

Reduplication is found in Hopi and Acoma to pluralize verbs and indicate durative aspect and in Zuni to mark repetitive aspect. Tanoan languages largely do not use reduplication, but some reduplicative forms exists in Taos to indicate repetitive action. Rubino (2011) finds reduplication in ~85% of languages surveyed, and it is found throughout the Americas so that chance innovation is highly likely and it is found commonly outside both the Pueblos and any reasonably posited larger area. Bereznak (1995) cites Moravcsik (1978) as noting that the meanings of reduplicative forms are very similar cross-linguistically so that meaning also cannot be used to distinguish the Pueblos or any larger area

(53) Noun incorporation: Not a Puebloan areal trait

This feature is found in Hopi, Tanoan, and Zuni (Bereznak 1995) and refers to the incorporation of a nominal object into a verb stem. This feature cannot be considered a Puebloan areal trait nor an areal trait of a larger area because it is very cross-linguistically common, especially in the Americas.

(54) *-bi* and *-di*: Strong Puebloan areal trait

Kroskrity (1982:64) argues that Arizona Tewa has gained the possessive postposition *-bi* and numeral suffix *-di* from contact with Navajo. Because no other Kiowa-Tanoan languages possess these suffixes I agree with Kroskrity (1982) and Bereznak (1995) that this is a clear case of diffusion.

(55) Passive prefixes and semantic foregrounding of Patient-Subjects in passive construction: Strong Puebloan areal trait

Kroskrity (1982:64) argues that Navajo led to these features' appearance in Arizona Tewa. As with (54), I agree with Bereznak (1995) who says this is a clear case of areal diffusion because it is not found in any other Kiowa-Tanoan languages.

(56) Use of an anaphor as a relativizer morpheme: Strong Puebloan areal trait

An anaphor is a word which refers to another word in a given sentence, for example, in "John likes the picture of himself", 'himself' is an anaphor. A relativizer morpheme is one which marks a relative clause. Kroskrity (1982-64-5) argues that Navajo led to this feature's appearance

in Arizona Tewa.[50] As with (55) and (54), this is not found in any other Kiowa-Tanoan language and should therefore be seen as a result of diffusion (Bereznak 1995).

Table 13: **Semantic Features**

Feature	Areal Status
Classificatory verbs	Yes

(57) Classificatory Verbs: Strong Puebloan areal trait

Classificatory verbs are ones which "not only express a verbal concept (e.g., 'go', 'fall', 'run', 'sit', 'bring') but also a specific type of object or subject which the verb may refer (e.g., solid roundish object, slender stiff objects, animate objects)" (Bereznak 1995:129-30). Navajo, Acoma, Zuni, and Tanoan languages all share this feature (Bereznak 1995). Classificatory verbs are probably inherited in Navajo because they are found commonly throughout Athapaskan (Cook & Rice 1989). Table 14 lists the classificatory verbs in Navajo, table 15 lists the Acoma classificatory verbs, and table 16 lists the Zuni classificatory verbs. Acoma has six classificatory verb, all referring to the handling of something with a specific shape. Zuni has a number of verbalizing suffixes which refer to the spatial arrangement or plurality of objects. It is difficult to determine if diffusion played a role in the development of a classificatory verb system in Acoma and Zuni, because they are language isolates. However, Miller & Davis (1963) do not include

[50] Examples in Bereznak (1995:154).

these verbs on their list of forms with correspondences across the Keresan languages. I agree with Bereznak (1995) that this suggests that they are specific to Acoma and not inherited.

Bereznak (1995) finds forms that may have been borrowed directly into Zuni from Navajo. One example Bereznak (1995:131) uses is *pii'haašč'ąąɬ*, which in Navajo means 'to remove it from a container', she argues that *pii'*, meaning on the interior of (an enclosed space such as a box, jar, etc.)' (Bereznak 1995:131) from this form is very similar to Zuni *-pi*, meaning 'to remove it from a deep container', which is not at all a significant semantic shift. Bereznak (1995) also says that Zuni *-łłi*, meaning 'to be objects in a pile', is likely borrowed from Navajo *-tł'in*, which is found on verbs referring to objects in a pile. The phonological difference between these can be explained by the fact that Zuni has neither a lateral affricate, nor a glottalized lateral fricative so that this was the closest approximation for Zuni speakers (Bereznak 1995:131).

Bereznak (1995) cites Speirs (1974) as suggesting that classificatory verbs are native to Kiowa-Tanoan languages. Bereznak (1995) says that the Kiowa-Tanoan classificatory system is different enough from Navajo to eliminate Kiowa-Tanoan languages as sources for diffusion into Zuni and Acoma, which I agree with. Bereznak (1995) and Kroskrity (1982) also note that Arizona Tewa is the only Tanoan language with a containerized class and Kroskrity (1982) argues that this is due to Navajo influence. Bereznak (1995) says that her research did not find classificatory verbs in any surrounding languages and I have not found this feature in any surrounding languages either. Therefore this feature is a strong areal trait of the Pueblos and diagnostic of the Pueblo linguistic area.

Table 14: **Classificatory Verbs in Navajo** (Bereznak 1995:129)

Verb	Meaning
nílá	to handle a slender flexible object
nááʔah	to drop a flat flexible object
nááłheę̨ž	to fall (a mushy viscous object)
nááłneʔ	To drop a solid roundish object
siką́	to lie in an open vessel
náánil	to drop (plural objects)

Table 15: **Classificatory Verbs in Acoma** (Bereznak 1995:130)

Verb	Meaning
-út'-	to handle things in a basket
-úst'-	to handle liquid
-uïst-	to handle things in a sack or box
-áam'áak^{h}u-	to handle grain/sandlike objects
-ûišaa-	to handle meat
-âaʔP-	to handle one flexible object

Table 16: **Classificatory affixes in Zuni** (Bereznak 1995:131)

Verb	Meaning
-la	to be objects growing together on ground

Verb	Meaning
-li	to be objects in a shallow container
-lo	to be buried
-łłi	to be objects in a pile
-na	to be objects on the surface
-ppo	to be objects in a deep container
-tta	to be a growing collectively of
-ya	to be a growing mass of
-pi	to remove objects from a deep container
-V:ti	to be a pile of

Table 17: **Ethnolinguistic Features**

Feature	Areal status
Differences in male and female speech	Yes
Sex of the Ego as a factor in kinship terminology	Yes
-mi	Yes

(58) Differences in male and female speech: Strong Puebloan areal trait

Kroskrity (1983) finds differences in male and female speech in all Puebloan languages except Zuni. Lexical items shown in table 18 show that the phonological differences in lexical

forms based on the sex of the speaker can be very significant, as with Hopi ‘it’s beautiful’, or nearly identical, as with Arizona Tewa ‘thank you’. Bereznak (1995) cites Sims & Valiquette (1990) as finding a patterned phonological difference in vowel length of male and female speakers of Laguna Keresan. Bereznak (1995) also cites Sims & Valiquette (1990) as arguing that the fact that the sex based linguistic difference in Laguna Keresan is tied to phonology, as opposed to lexical form, shows that this feature is not areal. I agree with Bereznak (1995:76)’s response: “borrowed linguistic traits are not always realized in exactly the same way in the borrowing language as in the donor language”. Bereznak (1995) cites Sims &Valiquette (1990) as arguing “such sociolinguistic [features] may arise through cultural diffusion rather than linguistic diffusion” (Bereznak 1995:76). I argue that cultural diffusion and linguistic diffusion are not always separated with such firm boundaries and sometimes diffused features can blur them. In this case it is fair to call this feature a result of cultural and linguistic diffusion, it is linguistic diffusion because more than likely it was gained through multilingualism in the area. It can also be considered an instance of cultural diffusion, though, because the idea of separate male and female speech is cultural. This feature is not found to such an extent in languages surrounding the Pueblos and can, therefore, be considered both a strong areal trait as well as a diagnostic one.

Table 18: **Example Male and Female Lexical Differences** (table taken from Bereznak 1995:75)

Lexical Item		Hopi	Arizona Tewa	Tiwa	Keresan
‘thank you‘	M	kʷakʷha(-y)	kunda	kawə’	
	F	ʔaskʷali	kuna	hɛrkɛm	

Lexical Item	Hopi	Arizona Tewa	Tiwa	Keresan
‘it’s beautiful‘ M	loloma	sagiʔwoʔ		ʔanʸiitsʔe
F	sonwayo	ʔasagi		anʸumeetsʔa
‘yes‘ M	taʔa	hoy		
F		haˌ:		

(59) Sex of the Ego as a factor in kinship terminology: Puebloan areal trait

The sex of the Ego as a factor in kinship terminology is a specific subset of (55), but, because of its linguistic distribution it is worth separating. This feature is very important in Navajo kinship terminology distinctions and determines many kinship terms. In Hopi and Zuni the Ego’s sex only effects one kin relation. In Hopi it is ‘younger sister’ (*siwa* for a male speaker and *tuvko* for a female speaker, which also means ‘younger brother’) (Bereznak 1995). In Zuni *suwe* means ‘younger brother of a male’ and *ʔotstsi-na* means ‘brother of a female’. Bereznak (1995) says that sex of the Ego also affects kinship terms in Acoma, but that the information is not complete, although it appears to affect multiple kinship relations. Other Athapaskan languages distinguish terms for siblings based on the speaker’s sex so that it is probably an inherited trait in Navajo. Northern Uto-Aztecan languages do not appear to differentiate kinship terms based on speaker sex, suggesting that Hopi did not inherit it. This feature is not confined to the Pueblos though—Yaqui also distinguishes kinship terms based on speaker sex (Haugen p.c.), as do Tonkawa, Wichita, and Caddo (cf Bereznak 1995:142-3 for examples). Because the languages immediately surrounding the Pueblos do not show this feature, I agree with Bereznak (1995) that Navajo was the likely source of this feature within the Pueblos and it can be

considered a Puebloan areal trait, although it cannot be considered diagnostic because a number of nearby languages also show this feature.

(60) *-mi*: Strong Puebloan areal trait

This suffix is found in Hopi and Acoma and I agree with Bereznak (1995) that this is a strong areal trait of the Pueblos. The suffix is phonologically the same in both languages (Bereznak 1995). In Hopi the suffix indicates the "usual name form" (Bereznak 1995:145) of the directions. In Hopi this suffix is a general allative marker and has been reconstructed for Proto-Uto-Aztecan, although with slightly different, yet related, meanings (Langacker 1977:94). Acoma only uses this suffix to indicate the nominal form of directions and, as no other Keresan languages have this suffix, it is very likely that it was diffused from Hopi.

4.1.3.3. Discussion of the Pueblos as a Linguistic Area

I have identified thirty-one potential areal traits of the Pueblo region (see table 19) with twelve traits I classify as strong[51] and six which I classify as somewhere between weak and strong,[52] but generally on the strong side. There are also six traits that require more research to determine their relative strength as areal traits.[53] While I agree with Bereznak (1995) that linguistic areas are more commonly made up of bundled isoglosses, as opposed to a few diagnostic traits, it seems as

[51] These traits are: at least one rhotic (only in Santa Clara Tewa, Isleta, and Acoma); tʲ; *ʔas*; shared conditional markers; nominal and accusative case marking in pronominal system; three-way demonstrative system; *-bi* and *-di*; passive prefixes and semantic foregrounding of Patient-Subjects in passive constructions; use of an anaphor as a relativizer morpheme; classificatory verbs; differences in male and female speech; *-mi*.

[52] These traits are: 3 stop series; ɬ; ts; aspirated consonants; glottalized consonants; sex of Ego as a factor in kinship terminology.

[53] These traits are: glottalized consonants; hʲ; V > ø / _#; verbal number suppletion and shared suppletive words; marking of verbal arguments solely with independent pronouns; plural marking on nouns.

though the Pueblos show evidence for both. I find seven traits which are found in most, if not all, of the Puebloan languages and can be said to be diagnostic of the Pueblo linguistic area (see table 20). If these traits are eliminated from the data, the Pueblo linguistic area still has twenty-four traits which seem to have been diffused across languages of the area. There is also a problem where some of the traits I have classified as diagnostic are found in languages outside of the area. I defend their status as Puebloan areal traits by arguing that they do delineate the Pueblo linguistic area, but not all of them[54] allow for a checklist of features which can be used to identify a possible Puebloan language without knowledge of the area. However, the idea that such a 'checklist' could exist is ridiculous and areal linguistic analysis, as with analysis in any other linguistic or scientific field, requires knowledge of what is being analyzed.

The major recurring problem in analysis of the data lies with the isolate status of Zuni and, to a lesser extent, Keresan. I say that Keresan is an isolate "to a lesser extent" than Zuni because the many varieties of Keresan have allowed linguists to reconstruct some of Proto-Keresan. Zuni, however, has no such literature, as far as I have found, because it is an isolate and the varieties are not as well defined as with Keresan, making internal reconstruction sometimes difficult and other times impossible. This issue sheds light on the importance of not only identifying genetic relationships between languages but, more importantly, accurately identifying those relationships. False genetic relationships can distort the relative strength of linguistic areal traits, as well as the linguistic areas themselves.Where the comparative method fails, internal reconstruction must be used to it fullest extent to where it is still reasonably reliable.

[54] i.e. verbal number suppletion, along with common suppletive words and a three-way demonstrative system.

Table 19: **Puebloan Areal Traits**

Trait	Puebloan languages which have the trait	Non-Puebloan languages which have the trait	Notes
2-2-1 vowel system	Jemez, Isleta, Zuni, Acoma	Coahuiltecan, all Yuman languages	Very weak
Phonemic pitch	Acoma, Navajo, Third Mesa Hopi, all Tanoan languages	Kiowa, all Apachean languages	Weak
3 stop series	Acoma, Santa Clara Tewa, Picurís	All Apachean languages	-
Retroflex sounds	Acoma, Santa Clara Tewa	Tohono O'odham, all Yuman languages	Very weak
c/č	Zuni, Acoma, Santa Clara Tewa, Navajo	Coahuiltecan, all Apachean languages	Weak
x^w	Navajo, Santa Clara Tewa, Taos, Picurís	Yuma, Coahuilteco, Tonkawa, all Great Basin Uto-Aztecan languages	Very weak
ɬ	Hopi, Tiwa, Zuni, Navajo	Yuma, Tohono O'odham, all Apachean languages	-
At least one rhotic	Hopi, Acoma, Santa Clara Tewa, Isleta	Comanche, all Yuman languages, some varieties of Southern Paiute	Probably not areal in Hopi; Santa Clara Tewa and Isleta probably gained in from Keresan
ts	All Puebloan languages		Diagnostic of Puebloan area
Aspirated consonants	Acoma, Navajo, Zuni, all Tanoan languages except Jemez		Diagnostic of Puebloan area

Trait	Puebloan languages which have the trait	Non-Puebloan languages which have the trait	Notes
Glottalized consonants	All Tanoan languages, Keresan, Navajo, Zuni	Tonkawa, Caddo, Washo	Zuni is questionable; diagnostic
tʲ	Keresan, Jemez, Santa Clara Tewa		Strong
hʲ	Arizona Tewa, Navajo		Only found allophonically in Navajo and lack of frequency data means that chance innovation is still a possibility
Absence of voiced stops	Most Puebloan languages	Tonkawa, all Yuman languages, most Great Basin languages	Weak
V > ø / _#	Hopi, Zuni, Taos		No comment on relative strength
Verbal number suppletion and shared suppletive words	All Puebloan languages (probably even Tanoan)	Most Uto-Aztecan languages	Diagnostic of non-Uto-Aztecan Puebloan languages
Marking of verbal arguments solely with independent pronouns	Hopi, Zuni	Some Uto-Aztecan languages	This trait remains a maybe until more internal reconstruction can be done on Zuni
-ti aspectual suffix	Hopi, Zuni, Navajo		Prefix in Navajo; Zuni may have inherited suffix
ʔas	Navajo, Hopi		Strong
Shared subordinate affixes	Zuni, Acoma		Strong

Trait	Puebloan languages which have the trait	Non-Puebloan languages which have the trait	Notes
Shared conditional markers	Zuni, Taos		Very strong
Plural marking on nouns	Hopi, Zuni, Taos, Acoma, Navajo	Required on all nouns: Shoshone, Yaqui, Tepehuan Required for all nouns except inanimates: Northern Paiute Optional and only human nouns are marked: Maricopa Required and only mark human nouns: all other Southwestern languages in Haspelmath (2011)	Required on all nouns for Hopi, Zuni and Taos; optional for Acoma and Navajo and only marked on animated nouns; inconclusively a trait
Nominal & accusative case marking in pronominal system	Hopi, Zuni		Probably either instance of areal diffusion or areal pressure; strong
Three-way demonstrative system	All Puebloan languages except Navajo	Tonkawa	Strong; diagnostic of Puebloan area
-bi and *-di*	Arizona Tewa, Navajo		Strong
Passive prefixes and semantic foregrounding of Patient-Subjects in passive constructions	Arizona Tewa, Navajo		Strong

Trait	Puebloan languages which have the trait	Non-Puebloan languages which have the trait	Notes
Use of an anaphor as a relativizer morpheme	Arizona Tewa, Navajo		Strong
Classificatory verbs	Navajo, Acoma, Zuni, all Tanoan languages	Found throughout Athapaskan	Strong; diagnostic of Puebloan area
Differences in male and female speech	All Puebloan languages except Zuni		Strong; diagnostic of Puebloan area
Sex of Ego as a factor in kinship terminology	Navajo, Hopi, Zuni, Acoma	Yaqui, Tonkawa, Wichita, Caddo, throughout Athapaskan	
-mi	Hopi, Acoma		Strong

Table 20: **Diagnostic Features of Pueblo Linguistic Area**

Trait
ts
Aspirated consonants
Glottalized consonants
Verbal number suppletion and common suppletive words
Three-way demonstrative system
Classificatory verbs
Differences in male and female speech

4.1.4. Puebloan Loan Words

In tables 21-24 I show some of the identified loans in the Pueblos. Hill (2007) was the only article that offered examples of loan words among the Puebloan languages. Many scholars though, have found that the Puebloan languages seemed to borrow and loan very few words to other languages (Hill 2007, Kroskrity 1982, 1993; Bereznak 1995; Campbell 1997; Bereznak 1995:184 also cites Walker 1967:256). Regardless of the Pueblos' status as a linguistic area, the known intensity of long-term contact and widespread multilingualism in the area means that the Pueblos should have exchanged many lexical items over a long period of time. Kroskrity (1982) suggests that situations with prevalent multilingualism coupled with linguistic conservatism, something that is found throughout the Pueblos (Sherzer 1976, Bereznak 1995), cause "lower salience" (Bereznak 1995:158) linguistic elements (such as grammatical morphemes) to more readily be borrowed than "higher salience" (Bereznak 1995:158) linguistic elements (such as lexical items).

Kroskrity (1982) partially accounts for the linguistic conservatism by citing their linguistic conservatism, which may cause certain borrowings, such as lexical items, to be rejected because of their clear foreignness. This attitude has also effected cultural and linguistic studies of the region. The Puebloan peoples, most famously the Hopi, limit access for anthropologists and linguists. Sometimes, the tribal leaders will stop work from being published or sold, one of the most famous cases was with the Hopi Dictionary Project. An issue raised by this foreigner-wariness is that scholars do not know if this attitude was present prior to Spanish contact, or if it came about as a response to Spanish colonialism as a way to protect their culture, religion, etc. These are not mutually exclusive, though, it is possible that linguistic and cultural

conservatism was present in Puebloan culture before Spanish contact, but was intensified in response to Spanish colonial pressures. It is important to try to determine when this anti-foreignist sentiment came about because it determines the effect that this dearth of loan words among Puebloan languages has on theories on linguistic universals. If the Pueblos were wary towards foreignisms in precolonial times, the dearth of Puebloan lexical exchange is likely due to lexical items being more easily seen as foreign. If this attitude appeared in historic times after contact with the Spanish, then linguists must find some other explanation for the lack of lexical exchange in the Pueblos.

Bereznak (1995) notes that there are other factors which may account for the lack of Puebloan lexical loans. One major factor is the lack of studies that examine loanwords in the Pueblos (Kroskrity 1993). There is also the issue that the sound systems of the various Puebloan languages are considerably different from each other so that loanwords may be hidden without in-depth research into them (Bereznak 1995).

In a recent study of linguistic influence in the Chaco region of South America, Campbell & Grondona (2012) find remarkably few Spanish loan words in Nivaclé and Chorote. This is significant because most Latin American languages have had a similar level of contact with Spanish and have borrowed many more words to describe Spanish additions to their environments and cultures. This case, however, is considerably different in that these languages can easily create names for new things in their environment by using *-tax* in Nivaclé and *-tok* and *-ta* in Chorote, suffixes which gloss as 'similar to' (Campbell & Grondona 2012). Campbell & Grondona (2012) also argue that these languages were not accustomed to borrowing lexical items before Spanish contact, making them less likely to borrow Spanish words post-Contact. This

case does show that it is possible for languages to resist lexical borrowing but it does not explain why the Pueblos have borrowed and loaned out so few words amongst themselves.

Table 21: **Keresan to Zuni Loan Words** (Hill 2007:31)

Keresan form	Keresan meaning (if different	Zuni form	Zuni Meaning
Santa Ana *tyaá*		*cha*	child, young of animals
Acoma *ʔíṣátʔi*, Santa Ana *ʔiṣatʔi*	grease, lard	*isha*	grease, fat, tallow, shortening
Acoma *skʔaʔšŭ*, Santa Ana *skʔàšĭ*, Santo Domingo *skʔaâšĭ*		*kʔyashshita* (final *-ta* possibly came from Santa Ana plural suffix *-ta*)	fish
Santa Ana *màkʔɬ́*	daughter	*makkʔi*	woman with children
Acoma *buúrʔaiʔkă*, Santa Ana *buúrʔàikă*, Santo Domingo *buúrʔaga*		*puula, puulakya*	butterfly
Santa Ana *sipʔaapʰɨ*		*Shipapolima*	Eastern Kachina Home
Keresan **šiíwanna*	rain deity, priest	*shiwani*	rain priests
Santa Ana *tápuúpʰŭ*		*taapuupu*	governor
Santa Ana *-čʔĭ* (possibly)	arrive	*teʔci*	arrive, reach
Acoma *ʔúwaákA*, Santa Ana *ʔúwàakă*, Santo Domingo *ʔuúwakă*	baby	*uwakya*	ceremonial relationship
Keresan *wenimace*		*Wenima*	Western Kachina Home

Keresan form	Keresan meaning (if different	Zuni form	Zuni Meaning
Santa Ana *wʔĭ*	child	*wiha*	baby
Keresan *cúski*	fox	*suski*	coyote

Table 22: **Zuni to Hopi Loan Words** (Hill 2007:32)

Zuni form	Zuni meaning (if different)	Hopi form	Hopi meaning
-hakto	unknown meaning e.g. *yamuhakto* 'paired kachinas'	*Hakto*	one of the warrior kachinas in the Shalako kachina line as performed at Hopi
heheʔa		*Heheyʔa*	a kachina
Huututu		*Hotooto*	the two kachinas that accompany *heeʔeʔe* in the procession during the Powamuy ceremony
kokko	kachina	*Kookopölö* (Zuni *kokko* + Hopi *-pölö* 'having a round shape)	a kachina with a humpback
Koyemshi		*Kooyemsi*	Mudhead kachina
		Korowista	a kachina (said to be a Zuni word)
Pawtiwa		*Pawtiwa*	a kachina
Payatamu		*Payatamu*	a kachina
Shaʔlako		*Shaʔlako*	Shalako, a kind of kachina
Saja Tasha	Long Horn	*Sájartasa*	a kachina

Zuni form	Zuni meaning (if different)	Hopi form	Hopi meaning
chittola	rattlesnake	*Siitulili*	a kachina
Shuʔla:wici		*Sólàawici*	a kachina; plural refers to the entire kachina group of "Zuni-type kachinas" that accompany the Shalako
		Second Mesa: *Talmopiyaʔkya* Third Mesa: *Talmopiyáakya*	a kachina from Zuni

Table 23: **Hopi to Keresan Loan Words** (Hill 2007:35)

Hopi form	Hopi meaning (if different)	Keresan form	Keresan meaning
honani	badger	*honani*	badger fetish
~~tɨ~~	hot	**~~ɨ́rɨ́~~*	hot
kacina		Acoma *kʔáazíná*	kachina
Maasaw~~ɨ~~	Masawu (connected with words for 'ashes' and 'skeleton')	*Masewi*	one of the twin war gods
poli-		Acoma *buúrʔaiʔkă*, Santa Ana *buúrʔàikă*, Santo Domingo *buúrʔaga*	butterfly
~~sɨ̀ɨ̀vɨ~~		*sípă*	eyebrow (Hill 2007) is skeptical about this one)

Hopi form	Hopi meaning (if different)	Keresan form	Keresan meaning
ciro		**sírʔuú*	small bird
yaawi	ceremonial baton	**yaápí*	staff of office

Table 24: **Keresan to Hopi Loan Words** (Hill 2007:35)

Keresan form	Keresan meaning (if different)	Hopi form	Hopi meaning
kʔaáḍɔwi	mythical two-headed snake	*Katoya*	two-headed snake patron of the Antelope Society
Acoma *k-áwʔes-tiima*	Mount Taylor	*Kawéstima*	Betatakin Ruin, Northwestern Kachina Home
**múšêiză*		*mosarɨ*	buffalo
Santa Ana *sipʔaapʰɨ*		*sipapɨ*	Sipapu
wenimace		*Weenima*	Southeastern Kachina Home

4.1.5. Examining the East-West Split of Pueblo Linguistic Area

Hill (2007) and Bereznak (1995) find evidence for a possible East-West split among the Puebloan languages. The Western Puebloan languages consist of Hopi and Zuni, while the Eastern Puebloan languages are Tanoan and Keresan. Hill (2007) does not include Navajo because it appears to show a connection to both, which, because of its geographic placement in the center of the Pueblos, is not surprising. In my analysis of both the Western and Eastern

Puebloan areas, I will not factor in Navajo in my trait analyses. Because Navajo appears to be a sort of bridge language between the two areas, I propose that it is a special sort of language where it lies in both areas simultaneously. This may be partially due to Navajo's relatively recent arrival in the Pueblos, so that it has not had the time to "pick a side", however this is only harmless speculation and other factors are more than certainly at play. Hill (2007) also does not include Arizona Tewa, which is a Tanoan language spoken on the eastern part of the Hopi reservation, in northeast Arizona. Arizona Tewa speakers originally came from the southern Tiwa Pueblos San Marcos, San Lazaro, San Cristobal, and Galisteo and only moved to Hopi territory after the Pueblo Revolt of 1680 so that they are an incredibly recent addition to the Western Pueblos. This suggests that Arizona Tewa will likely share Eastern Puebloan features, although, as I have not found evidence to directly show this, and Hill (2007) leaves dialects out of her examination I cannot make anymore than a guess until more research is done comparing Arizona Tewa to the Eastern and Western Pueblos.

Hill (2007) says the traits of the Western Pueblos are: switch reference; internal verb reduplication for iterative aspect; subject marking by independent nominal; productive noun plural suffix; *-ti* transitional;[55] accusative-like direct object marker *-ya* and possessive marker *-aiya*. I would also like to add to Hill (2007)'s list of Western Puebloan traits: nominal and accusative case marking in pronominal system; shared conditional markers in Hopi and Zuni; marking of verbal arguments solely with independent pronouns. I realize that in 4.1.3.2. I said that the marking of verbal arguments solely with independent pronouns required further internal reconstruction in the Zuni language to determine if it is the result of diffusion or chance

[55] This is the same as the *-ti* aspectual suffix that I examined in (39). I use Hill (2007) label only when referring to her work.

innovation. It is possible that if diffusion was not a role in the development of this feature, that areal pressure played a role in its shared retention. I defend this as a trait of the Western Pueblos because it does separate the Western Puebloan languages from the Eastern Puebloan languages as well as from all nearby non-Puebloan languages. Because of this it does isolate the Western Pueblos and is a trait that a linguist should look for in another possible Western Puebloan language.

I do not agree with Hill (2007)'s reduplication trait for the Western Pueblos. This feature, as I said in (52), is also found in Acoma so that it does extend outside of the Western Pueblos, but it still remains within the Pueblo linguistic area. Reduplication is also incredibly cross-linguistically common so that its appearance in Acoma is possibly due to chance innovation rather than diffusion from Hopi. As I said in (52) reduplication also tends to have very similar meanings in all languages that use it so that would be difficult to use the feature to mark any new language as specifically Western Puebloan.

Hill (2007) also offers shared traits for the Eastern Puebloan languages, which are: full glottalized consonant series; full aspirated consonant series; tonal accents; subject marking by verbal prefix; passive triggered by animacy. I would also like to add to Hill (2007)'s posited Eastern Puebloan traits: t^j; three stop series, which includes glottalized and aspirated series. The aforementioned traits are only ones which I believe I have already proven as areal traits in 4.1.3.1. and 4.1.3.2. They are also only found in the Eastern Puebloan languages so that they certainly delineate an Eastern Pueblos linguistic area. I would also like to put forth possible Eastern Puebloan areal traits which are more problematic but I believe no less worth considering.

The presence of at least one rhotic (15) in Santa Clara Tewa and Isleta was most likely gained from contact with Keresan. Although Hopi also uses rhotics, it is not geographically contiguous to the Eastern Puebloan languages and, as I showed in my discussion of (15), it is most likely not the result of areal phenomena, and, therefore, this feature can still be considered an Eastern Puebloan areal trait.

Retroflexed sounds (7) can also be considered very weak areal traits of the Eastern Pueblos. These sounds are found outside of the Eastern Pueblos, but the Tohono O'odham and the Yuman languages are not geographically contiguous. Yuman languages also tend to share more linguistic features with the Western Pueblos suggesting that much of the contact with Yuman languages was done through the Western Pueblos, which is not to say that direct contact with the Eastern Pueblos did not occur. Sherzer (1976) argues that Santa Clara Tewa probably gained them through contact with Acoma so that intra-areal diffusion has been reasonably posited. Retroflexed sounds can be considered a weak areal trait of the Eastern Pueblos.

I disagree somewhat with Hill (2007)'s inclusion of glottalized consonants and aspirated consonants in her list of Eastern Puebloan traits. Glottalized consonants are only problematic in that it is more accurate to say phonemic glottalized consonants. This is a relatively minor change, but it does serve to truly isolate the Eastern Puebloan languages. As I discussed in (24), Zuni does show glottalized consonants but they are analyzed as stop + glottal clusters so that they are not truly phonemic. With this minor change I agree with Hill (2007) that glottalized consonants are certainly an Eastern Puebloan areal trait.

Hill (2007)'s inclusion of aspirated consonants also seems somewhat problematic because of their appearance in Zuni. I agree with Hill (2007) though, and I believe that these are an areal

trait of the Eastern Pueblos. Their appearance in Zuni can be attributed to a westward spread of this feature so that it is essentially in the process of becoming a non-Eastern Puebloan areal trait. At this point though, it is still largely an Eastern Puebloan trait with its diffusion roots likely in the Eastern Puebloan languages.

Tonal accents do appear in Third Mesa Hopi, Kiowa, Caddo, and all Apachean languages so that they are not contained within the Eastern Pueblos. I do agree with Hill (2007), though, that these are still a weak areal trait in the Eastern Pueblos. Kiowa and Apachean languages have tone because it is an inherited trait in those languages. Caddo is not necessarily problematic because it is not geographically contiguous with the Eastern Pueblos and, therefore, this feature can still be used to delineate the area. I believe that its appearance in Third Mesa Hopi could show westward expansion of the trait so that, as with aspirated consonants, it is becoming a more pan-Puebloan trait. However, as I discussed in (4), innovation through regular phonological processes has been documented so that phonemic pitch could have also arisen independently of areal influence. For now, though, it is largely contained to the Eastern Pueblos.

The linguistic split between the Eastern and Western Pueblos is not surprising because many scholars have found cultural splits between the Eastern and Western Pueblos. As I discussed in section 3, Hale & Harris (1979) propose an East-West split of the Puebloan culture area and they argue that the split is even prehistorical where the Eastern Pueblos draw more from Mogollon culture, while the Western Pueblos draw more from the culture of the Ancestral Pueblo People. Hewitt (1943) additionally, finds differences in the kachina cults of Eastern Puebloan peoples and Western Puebloan peoples. This split is likely related to the peoples who regularly interacted with the Western and Eastern Puebloans. Linguistic evidence shows that Yuman

cultures more often interacted with the Western Puebloans, while the Eastern Puebloans were in much more contact with the southern Plains Indians, especially the Tonkawa.

Table 25: **Proposed Western Puebloan Areal Traits**

Trait	Notes
Switch reference	
Internal verb reduplication for marking iterative aspect	I am very confident that this is not a Western Puebloan areal trait
Subject marking by independent nominal	
Productive noun plural suffix	
-ti aspectual suffix	
Accusative-like direct object marker *-ya* and possessive marker *-aiya*	
Nominal and accusative case marking in pronominal system	
Shared conditional markers in Hopi and Zuni	
Marking of verbal arguments solely with independent pronouns	Diffusion into Zuni is questionable but areal pressure may have caused retention of the feature and it helps outline the area

Table 26: **Proposed Eastern Puebloan Areal Traits**

Trait	Notes
Full phonemic glottalized consonant series	-
Full aspirated consonant series	Appearance of feature in Zuni may reflect westward expansion of trait
Tonal accents	Weak; appearance in Third Mesa Hopi possibly shows westward expansion; Caddo is not geographically contiguous; genetic trait of Apachean and Kiowa-Tanoan
Subject marking by verbal prefix	-
Passive triggered by animacy	-
t^j	-
3 stop series	-
Presence of at least one rhotic	-
Retroflexed sounds	Very weak

In this section I have shown that the Pueblos, which I believe to be a very well defined linguistic area, have Eastern and Western subareas. I posit that this may be partially due to influence from the Yuman languages, for the Western Pueblos, and possibly the southern Plains and southeastern Southwest, for the Eastern Pueblos. I have no evidence for the latter connection, however, it would not be surprising considering the geography of the area. While in this section I have

largely looked for more specific ties among the Puebloan languages, in 4.2., I will zoom out and examine the Pueblos' possible linguistic ties to the Southwest.

4.2. Examination of Southwest Areal Traits

In this section I will examine possible areal traits of the Southwest. My analysis of these traits will be much more limited than my analysis of Puebloan traits because the amount of comparative research done on Southwestern languages and the Southwest region is comparatively limited. As far as I have found, Sherzer (1976) is the only comprehensive study of the area and, as I discussed in 4.1.1., there are problems with the methods used in his study. I urge linguists in the future, and I may be among them, to do more comparative work on the Southwest to better determine its status as a linguistic area because, admittedly, due to the limited nature of the existing literature my analysis is equally limited.

4.2.1. Southwest and Puebloan Lexical Diffusion

Hill (2007:31) offers all of the lexemes in this section, because, as I said in 4.2., comparative work between Southwest and Puebloan languages is very limited. This is not to say that I question Hill (2007)'s analyses of these lexical items as borrowed, in fact I agree with all of her proposed loan words. However, it is worth noting that the long term interaction between Southwest and Puebloan languages, indicates that there should be more lexical borrowings among the other languages of the Southwest and Pueblos.

Table 27: **Piman[56] to Zuni loan words** (Hill 2007:31)

Piman form	Piman meaning (if different)	Zuni form	Zuni meaning
hoa	basket	*hoʔi*	shallow, tightly woven basket
kai	seed	*ka*	grain of wheat, small seed
kihe/kiha	some kind of brother	*kihe*	ceremonial brother
ki:	house' or maybe Hopi *kiva*	*kiwihci*	kiva
koʔokol		*kʔola*	chile
Tepiman *kokʔoi*	spirit of the dead	*kokko*	good kachina
Tepiman **koʔo-wi*		*Kolowisi*	Horned Serpent
oks	old woman	*oka*	woman
s̈ima	bold, mean	*shumaʔkwe* (Piman *s̈ima* + Zuni *-ʔkwe* 'collective suffix)	ShumaʔkweSociety

This list is not meant to be comprehensive, however, it does show that Zuni has interacted with Piman languages and borrowed words. As I argue in 2.2.2.1., shared lexical items, in general, do not affect a region's status as a linguistic area, however, they can shed light on the context under which interaction between speakers has taken place.. Because Hill (2007) does not comment on any semantic patterns within these loan words, I will not either.

[56] This refers to the subfamily of Uto-Aztecan known as Piman, or Tepiman, but for the purpose of this section I will use the name used in Hill (2007).

4.2.2. Possible Southwest Areal Traits in Sherzer (1976)

Because there has been so little comparative work on the Southwest as an area I will not be able to add much to Sherzer (1976)'s features, but I will discuss further evidence where possible. For this section I will be drawing on Sherzer (1976)'s data on Californian, Great Basin, and Plains areas in addition to his Southwest data.[57] The languages Sherzer (1976) examines within the Southwest are: Yuman: Yuma, Yavapai, Mohave, Havasupai, Walapai; Uto-Aztecan: Tohono O'odham, Hopi; Apachean: Navajo, Western Apache, Chiricahua Apache, Jicarilla; Zuni (isolate); Keresan: Acoma; Tanoan: Jemez, Tewa, Tiwa; Coahuiltecan: Coahuilteco. For Californian languages, I will only be drawing on languages from Sherzer (1976) which fit into the category southern Californian. I define this category based on the Californian languages used by other scholars to examine the Southwest and geographic location of the languages in relation to the Southwest and Great Basin. The languages that I consider southern Californian are: Yuman: Diegueño; Uto-Aztecan: Cahuilla, Cupeño, Luiseño, Serrano, Tübatulabal. I separate southern Plains languages in the same way as I did the southern Californian languages, the languages which fit into this category are: Caddoan: Pawnee-Arikara, Kitsai, Wichita, Caddo; Kiowa-Tanoan: Kiowa; Apachean: Lipan Apache, Kiowa Apache; Uto-Aztecan: Comanche; Tonkawa (isolate). The Great Basin languages examined by Sherzer (1976) are: Washo (isolate); Uto-Aztecan: Northern Paiute, Shoshone, Southern Paiute. In cases where Sherzer (1976) labels a language as questionably containing a feature, I do not list it here. I do this to avoid adding uncertainty to data which is already largely lacking. These lists are by no means exhaustive and there are many other languages which fit into all four of these areas. However, for lack of further

[57] I will be focusing on the existence of these traits in the southern Plains and southern California because the northern languages of these areas have not been seen as holding influence over the Southwest.

comparative work I must use the languages examined by Sherzer (1976). All tables in this section are taken from Sherzer (1976) as is all linguistic data unless otherwise noted.

Table 28: **Whole Areal Traits[58] of the Southwest**[59]

Feature	Non-Southwestern languages	Areal status
Pronominal plural	All Plains languages, all Great Basin languages, all Californian languages	No
Suffixation of verbal tense-aspect markers	California: Diegueño, Tübatulabal, Serrano, Luiseño, Cupeño, Cahuilla, Plains: Pawnee-Arikara, Kitsai, Wichita, Caddo, Kiowa, Kiowa Apache, Lipan Apache, Comanche, Tonkawa all Great Basin languages	No

Both of these features are too common in surrounding languages to be an areal trait of the Southwest. They are also found in languages outside a reasonable linguistic area so that they do not show a connection between the Southwest, Great Basin, Plains, and southern Californian languages.

[58] Sherzer (1976) defines whole areal traits as features which are found in all languages of a given area.

[59] Because this table is of Sherzer (1976)'s whole areal traits I do not include a section for Southwestern languages which show these traits because all of them do.

Table 29: **Features Which Are Absent in the Southwest**

Feature	Non-Southwestern languages which DO show the feature	Areal status
3-vowel system	Caddo	No
7-vowel system		No
tθ		No
Pharyngeal fricatives		No
x̣		No
x̣^{w}		No
ɬ’		No
Reduplication used to signify diminutive		No
Masculine/feminine gender		No
Inclusive/exclusive opposition in pronouns	Southern California: Tübatulabal all Great Basin languages Plains: Arapaho, Pawnee, Wichita, Kiowa, Comanche	Maybe (unlikely)
Visibility/invisibility opposition in demonstratives	Great Basin: Shoshoni, Southern Paiute Plain: Kiowa, Comanche	No
Form-shape numeral classifiers	Great Basin: Washo (inflected for persons/nonpersons/ immutable objects)	No

Feature	Non-Southwestern languages which DO show the feature	Areal status
Instrumental markers in verb	Southern California (all prefixes): Tübatulabal, Luiseño (vestigial), Cahuilla (vestigial), Diegueño all Great Basin languages Plains: Comanche, Tonkawa (as remnant)	Weak

3-vowel system: Only ~16% of languages surveyed in Maddieson (2011a) have vowel systems of 2-4 vowels so that it is not surprising that there only a few languages which show this feature.

Inclusive/exclusive opposition: This feature is a family trait of Kiowa-Tanoan and Uto-Aztecan (Sherzer 1976:179) so that its disappearance in the Southwestern languages of these two families could be due to areal influence. Cysouw (2011) finds an absence of inclusive-exclusive in pronouns in 61% of the languages surveyed so that chance loss is also very likely. Most languages of southern California and the southern Plains could have also effected Southwestern languages so that this is at best a very weak trait of the Southwest but more likely it is not an areal trait. It could be evidence of a connection between the Southwest and southern Californian languages and some southern Plains languages.

Instrumental markers on the verb: Many languages surrounding the Southwest use instrumental markers on the verb so that its absence in the Southwest could be an areal trait, but it is too

uncommon in the southern Plains to rule those languages out as possible influences. Therefore, this can be considered a weak areal trait of the Southwest.

Table 30: **Central Areal Traits of the Southwest**

Feature	Southwest languages	Non-Southwestern languages	Areal status
Glottalized stop series	All Apache, Zuni, Keresan, all Tanoan, Coahuilteco	Great Basin: Washo Southern Plains: Caddo, Kiowa, Kiowa Apache, Lipan Apache	No
s/š	Yuma, Tohono O'odham, all Apachean, Zuni, Acoma, Jemez, Tewa (Santa Clara), Tiwa (Isleta), Coahuilteco	Great Basin: Washo Southern Plains: Arikara, Caddo, Kiowa Apache, Lipan Apache	No
h	All Southwest languages except Yuma	Southern California: Diegueño all Great Basin languages all southern Plains languages	No

Feature	Southwest languages	Non-Southwestern languages	Areal status
l	All Southwest languages except Acoma, Tewa (Santa Clara), Tiwa (Isleta)	Southern California: Tübatulabal, Luiseño, Cupeño, Cahuilla, Diegueño Great Basin: Washo Southern Plains: Kiowa, Kiowa Apache, Lipan Apache, Tonkawa	No
Prefixation of nominal person markers	Yuma, Tohono O'odham (except 3sg), Hopi, all Apachean languages, Acoma, Taos	Southern California: Luiseño, Cupeño, Cahuilla, Diegueño Great Basin: Shoshone, Northern Paiute (proclitic forms of pronouns are loosely prefixed to nouns), Washo Southern Plains: all Athapaskan, Kiowa, Comanche, Tonkawa	No

Feature	Southwest languages	Non-Southwestern languages	Areal status
Alienable/inalienable nominal possession classes	All Yuman languages, Tohono O'odham, Hopi, all Apachean languages, Zuni, Acoma	Southern California: Tübatulabal, Luiseño, Diegueño All Great Basin languages Southern Plains: "Probably all languages of the Plains overtly distinguish alienable and inalienable nouns" (Sherzer 1976:178)	No
Nominal locative suffixes	All Yuman languages, Tohono O'odham, Hopi, all Apachean languages, Taos	Southern California: Tübatulabal, Serrano, Luiseño, Cupeño, Cahuilla, Diegueño All Great Basin languages Southern Plains: Kiowa, Kiowa Apache, Lipan, Apache, Comanche, Tonkawa	No

Feature	Southwest languages	Non-Southwestern languages	Areal status
Prefixation of verbal subject markers	All Yuman languages, Tohono O'odham, all Apachean languages, Acoma, Taos	Southern California: Cupeño, Cahuilla, Diegueño Great Basin: Northern Paiute, Shoshone (proclitic forms of pronouns loosely prefixed to verbs), Washo Southern Plains: all Athapaskan, Kiowa, Comanche, Pawnee, Wichita	No

Of Sherzer (1976)'s "central areal traits" of the Southwest, only glottalized consonants is uncommon enough in North America to be considered a possible areal trait. However, this feature can be considered diagnostic for the Pueblos, but it does not outline the North American Southwest because of its presence in nearby languages of the Great Basin, southern California, and especially the Plains. It also cannot be considered a trait which points to a larger area, of which the Southwest is a part of, because it is found in many other Californian and Plains languages which are not known to have had the same intensity of contact with the Southwest.

Table 31: **Western Southwest Regional Areal Traits**

Feature	Languages	Areal status
1-stop series	All Yuman languages, Hopi	No

Feature	Languages	Areal status
Retroflex sounds	All Yuman languages, Tohono O'odham, Acoma, Tewa (Santa Clara)	Weak
k/q	All Yuman languages, Hopi	No
Labial fricatives	Yuma, Yavapai, Mohave, Walapai, Havasupai, Hopi, Jemez, Tewa (Santa Clara, Arizona)	No
θ	Yavapai, Mohave, Walapai, Havasupai, Tewa (Santa Clara), Coahuilteco, Maricopa (added by Maddieson 2011f)	Yes
n^y	Yuma, Yavapai, Mohave, Walapai, Hopi, Tohono O'odham, Acoma, Tewa (Santa Clara)	Weak
At least one rhotic	All Yuman languages, Hopi, Acoma, Tewa (Santa Clara), Tiwa (Isleta)	No
r/l	All Yuman languages, Hopi	Yes
Overtly marked nominal case system	All Yuman languages, Hopi	No
Reduplication in verbal stem signifying distribution, repetition, etc.	All Yuman languages, Hopi, Tohono O'odham, Zuni	No

1 stop series: Sherzer (1976) this trait in the southern Californian languages Serrano, Luiseño, Cupeño, Cahuilla, and Diegueño, as well as Southwestern languages. Sherzer (1976) suggests that this may show a connection between the Southwest and southern California. Therefore, this

feature cannot be considered an areal trait of the Southwest, but I believe that it is possible that diffusion caused this feature's development in Yuman languages. I agree with Sherzer (1976), though, and this feature would have more likely spread from southern Californian Uto-Aztecan languages into Yuman so that it can definitely be considered a weak areal trait of a larger linguistic area connecting the Southwest and southern California

Retroflexed sounds: I classified this as a possible weak trait of the Pueblos, but it is not necessarily discounted from being a Southwest areal trait. Sherzer (1976) believes that Tohono O'odham developed this feature through contact with Yuman languages and this seems very plausible since they are geographically contiguous. Tohono O'odham's development of this feature is likely not linked to the feature's appearance in Santa Clara Tewa and Acoma because of the distance between them, which makes Yuman a far more likely source. Therefore this can be considered an areal trait of the Western Southwest, albeit a weak one.

k/q: It is possible that this k/q opposition developed in Hopi due to contact with Yuman, since it is reconstructed for Proto-Yuman (Campbell 1997:127). However, this feature is also found in the southern Californian languages Serrano, Luiseño, Cupeño, Cahuilla, and Diegueño (except the southern dialect) (Sherzer 1976) so that it appears to instead, reflect a larger area containing the Pueblos, Southwest, and southern Californian languages.

Labial fricatives: Yuma, Yavapai, Mohave, Walapai and Arizona Tewa show only /v/; Havasupai is the only Southwestern languages with only /f/; Hopi and Santa Clara Tewa show /f/ and /v/;

Jemez shows /β/ and /v/. Outside of the Southwest it is found in Comanche, allophonically in the Uto-Aztecan languages of the Great Basin, Serrano, Luiseño, Cupeño, Cahuilla, and Diegueño. Labial fricatives are not reconstructed for Proto-Kiowa-Tanoan (Hale 1967), Proto-Yuman (Campbell 1997:127), Proto-Uto-Aztecan (Langacker 1977:22), or Proto-Numic (Miller 1986). Of the language families represented above, /v/ is reconstructed for Proto-Takic (Kaufman 1900). Hinton (1991:149) says that this feature is not common in North America and I agree with her analysis that it can be considered an areal trait. However, it is not an areal trait of the Southwest, instead it reflects a greater area connecting the Southwest to southern California and the Plains.

θ: Maddieson (2011f) only finds dental and alveolar non-sibilant fricatives in ~8% of languages surveyed. This sound in also absent from southern Californian and southern Plains languages and only appears as an allophonic variant of /t/ in some varieties of Northern Paiute and Shoshone (Sherzer 1976), although Sherzer (1976) does not state the conditioning environment. This sound as a phoneme is contained to the Southwest and cross-linguistic frequency suggests that chance innovation is extremely unlikely. /θ/ is also not reconstructed for any of the represented language families[60] suggesting that diffusion is likely the reason for its appearance, although I cannot determine the source. Therefore this feature can be said to be an areal trait of the Southwest. Its appearance in varieties of Northern Paiute and Shoshone could be the result of common phonological processes or diffusion of the trait into the Great Basin.

[60] Internal reconstruction of Coahuiltecan is difficult because it is a language isolate.

n^y: This feature is reconstructed for Proto-Yuman, but not for Proto-Kiowa-Tanoan, Proto-Uto-Aztecan, or Proto-Keresan. Sherzer (1976) also notes that this feature is found only allophonically in Acoma. Outside of the Southwest it is only found in Cupeño, Cahuilla, Serrano, and Diegueño. Hinton (1991:146) argues that the sound's appearance in Serrano was almost certainly independent so that independent innovation is possible. It is possible that the other Southwestern and southern Californian languages, which show this trait, developed it from contact with Yuman languages, although it is notable that Hinton (1991:146) does not mention contact with Yuman as a reason for its development in Cupeño and Cahuilla. This can be considered an areal trait of the Southwest because contact with Yuman languages could have caused the feature's appearance in Hopi, Tohono O'odham, Santa Clara Tewa, and Acoma. Chance innovation has been posited in Serrano, Cupeño and Cahuilla, though, may have developed the feature from contact with Yuman so that this trait is only a weak areal trait of the Southwest. If linguists determine that Cupeño and Cahuilla gained the sound from contact with Yuman languages and the Diegueño was not the source, then this trait could reflect a connection between Southwestern and southern Californian languages.

At least one rhotic: The feature is reconstructed for Proto-Keresan, Proto-Yuman, and tentatively for Proto-Uto-Aztecan, but not for Proto-Kiowa-Tanoan (Campbell 1997) so that it is inherited in all Southwestern languages except Santa Clara Tewa and Isleta. This feature is found outside the Southwest in Comanche, Pawnee-Arikara, Kitsai, Wichita, some dialects of Shoshone and Southern Paiute, Serrano, Luiseño, Cupeño, and Diegueño (Sherzer 1976). This feature is also reconstructed for Proto-Caddoan so that it is also inherited in Pawnee-Arikara, Kitsai, and

Wichita (Campbell 1997:142-3). It is not reconstructed for Proto-Numic (Miller 1986) so that it is not inherited for Comanche, Shoshone, or Southern Paiute. Sherzer (1976) posits that Hopi probably gained its rhotic from contact with Yuman languages, although Hopi could have also gained it from contact with Keresan. As I said in (15), this feature is a Puebloan areal trait for Keresan, Santa Clara Tewa, and Isleta. Because it is also found in southern California, southern Plains and Great Basin it cannot be considered a Southwestern areal trait, but it may reflect diffusion between the Southwest, southern California, southern Plains and Great Basin.

r/l: This feature is absent among Great Basin and Plains languages, but it is found in all Takic languages except Gabrielino (Hinton 1991) and southern Californian Yuman languages. It is reconstructed for Proto-Yuman but not Proto-Uto-Aztecan (Hinton 1991). The appearance of this trait in Hopi and the Takic languages could be due to contact with Yuman languages. This does not necessarily discount r/l distinction as a Southwestern areal trait. Southern Californian Yuman languages, such as Diegueño and Tiipay, could have been the source for this feature in Takic languages, while Hopi could have gained the feature from Yuman languages in the Southwest. Because this feature's distribution is explainable in a way that does not areally link southern California and the Southwest, I believe that this can be considered an areal trait of the Southwest.

Overtly marked nominal case system: This feature is also found in Tübatulabal, Luiseño, Cupeño, Cahuilla, Diegueño, Tonkawa, and all Numic languages. This feature is also inherited in Hopi and Yuman so that diffusion did not play a role in its appearance. While areal pressure may have caused the retention of this feature, I do not believe that this can be considered an areal trait

of the Southwest because it is also found in many of the surrounding languages. Many of the other languages with this feature are also Uto-Aztecan suggesting that this feature is not often lost. It is possible that it could be reflective of a larger area, but this feature is also found in other non-southern Californian languages so that research which is outside of the scope of this thesis is required.

Reduplication of verbal stem to signify distribution, repetition, etc.: As I argued in (52), reduplication is far too common a feature to be considered an areal trait of the Southwest or an even larger area.

Table 32: **Possible Areal Traits of the Southwest**

Trait
Inclusive/exclusive opposition in pronouns
Retroflex sounds
θ
n^y
r/l

4.2.3. Discussion of the Southwest as a Linguistic Area

Most of the traits in table 32 are weak so that I agree to some extent with Sherzer (1976:150) when he says, “there is little evidence for treating the Southwest as a whole as a linguistic area”. Instead the non-Puebloan languages of the Southwest appear to act as a bridge, connecting the

Pueblos with southern Californian and Great Basin languages with the Pueblos and Southwest both directly connecting to the Plains. This is not surprising considering the amount and nature of trade in these areas. The Pueblos were largely a trade hub so that many peoples were coming to them and the Puebloan languages were in constant contact with each other (Ford 1983). It is also likely that mutual reliance of the Puebloan peoples on each other caused their languages to become more intimately linked. The rest of the Southwest did not have the same level of contact so that culture could be exchanged, but speaker contact was not enough to separate it as an area. The Southwest is by no means an extension of the Pueblos, instead it is more of a mixing point, sharing features with southern Californian, southern Plains, and Great Basin languages. The Western Pueblos seem to be linked more closely to the western languages of the Southwest, especially Yuman, while the Eastern Pueblos seem to be more linked to the Plains and southeastern Southwest languages, although the connection between the Eastern Pueblos, Plains and southeastern Southwest, seems significantly weaker. This is again not surprising given the languages' geographic locations suggesting that traders from the Plains and southeastern Southwest more often traded with the Eastern Pueblos, while the western Southwest languages interacted more with the Western Pueblos.

This is by no means a comprehensive examination of the Southwest as a linguistic area and all conclusions about the Southwest as a linguistic area are based on limited sources and evidence. Sherzer (1976) also does not include many languages which are considered Southwestern languages but which lie south of the U.S. Mexican border (i.e. outside of Sherzer (1976)'s examination field). As with the Pueblos, research which focuses on the Southwest is necessary and may find features which can be considered areal features of the Southwest and

must include Mexican languages such as Seri, Southern Tepiman, Taracahitic languages, Tarahumara, etc.

4.3. Greater Southwest

In this section I will briefly examine possible features connecting the Southwest, Pueblos, southern California, southern Plains, and Great Basin. This section is not meant to definitely establish an area, but only to offer a platform from which research into this possible area can launch from. I will call the possible larger area in this section the "Greater Southwest." This moniker is purely related to the focus of this thesis so that my research and interest in this greater area is stemming from the Southwest, however, I hope a more accurate name will be used in the future, one based on where the center or centers of this area lie and not limited to the geopolitical boundaries of the U.S. Bereznak (1995:3) says, "While the Pueblos display cultural unity, they are not isolated culturally, but have maintained contact with surrounding tribes (e.g. the Yuman groups of Western Arizona, the Numic speakers of the Great Basin, the Great Plains tribes, etc.)". It would not be wholly unexpected to find a linguistic area stretching from southern California, south and east to the Southwest and southern Plains and north to encompass the Great Basin because of the historical contact among these regions, as Bereznak (1995:3) notes. Hinton (1991) discusses many features which may have diffused between Yuman and Takic languages, some of which I discussed in my discussion of possible western Southwest traits, such as l/r opposition and bilabial fricatives. As Hinton (1991) does an adequate job of discussing the features I will not discuss them in this section. Instead I will discuss the features Sherzer (1976) finds in each of

the areas and attempt to separate features which could be areal from those which I think cannot be.

4.3.1. Sherzer (1976)'s Features of the Great Basin

Table 33: **Whole Areal Traits of the Great Basin** (Sherzer 1976:165)

Feature
Mid vowel
h
Alienable/inalienable nominal possession classes
Nominal & verbal reduplication
Pronominal plural
Inclusive/exclusive opposition in pronouns
Pronominal dual
Nominal locative suffixes
Suffixation of verbal tense-aspect markers
Verbal instrumental prefixes
Suffixation of verbal locative-directional markers

Of the above features, Sherzer (1976) considers the following to be the most characteristic of the Great Basin: mid vowel; Nominal & verbal reduplication; inclusive/exclusive opposition in

pronouns; pronominal dual; verbal instrumental prefixes; suffixation of verbal locative-directional markers. Nominal and verbal reduplication is very unlikely to be an areal trait of the Greater Southwest because, as I argued in (52), reduplication far too cross-linguistically common to be considered an areal trait of the Greater Southwest. As I noted in (35) pronominal dual is very likely an areal feature of the Greater Southwest and should be further researched.

Table 34: **Central Areal Traits of the Great Basin** (Sherzer 1976:165)

Feature
-vce vowels, nasals & semivowels
k/k^{w}
Bilabial fricatives
x
x^{w}
ŋ
Overtly marked nominal case system
Suffixation of evidential markers in verbs

Of the Great Basin's central areal traits, Sherzer (1976) considers the following to be the most characteristic of the area: voiceless vowels, nasals, and semivowels; k/k^{w} opposition; bilabial fricatives; x^{w}; ŋ; an overtly marked nominal case system. Although I posit x^{w} as a possibly very weak Puebloan areal trait in (11), this feature can also be considered a possible areal trait of the Greater Southwest because it may reflect diffusion both within the Pueblos and among non-

Puebloan languages within the possible Greater Southwest. /ŋ/ is a shaky feature because, as I discussed in (14), it is not cross-linguistically uncommon, although also not particularly common, so that chance innovation cannot be ignored.

Table 35: **Features which are Absent in the Great Basin** (Sherzer 1976:165-6

Feature
3-vowel system
4-vowel system
7-vowel system
Nasalized vowels
2-stop series (-vce/ glottalized)
4-stop series
tθ
q^w
Glottalized fricatives
Pharyngeal fricatives
x̣
$x̣^w$
ƛ
ƛ’
λ
ɬ’
$ɬ^y$
l^y

Feature
n^y
Glottalized r
r/l
Reduplication signifies diminutive
Masculine/feminine gender
Form-shape numeral classifiers
Prefixation of verbal tense-aspect markers

Sherzer (1976) does not note anything about the absence of these features and I do not find any features which are also absent in the Southwest, southern Plains, or southern California and cross-linguistically common enough to posit areal pressure or influence as a significant factor in their absence or loss.

Table 36: **Regional Areal Traits of the Great Basin**

Feature	Region within the Great Basin
Prefixation of nominal person markers	Northern Great Basin
Prefixation of verbal subject markers	Northern Great Basin
Visibility/invisibility opposition in demonstratives	Southern Great Basin

I have no evidence to add to this section, however, it is worth noting that both regional features of the northern Great basin are also found across the Southwest, southern California, and southern Plains. The fact that both features are found in many of the same languages, though, suggests that prefixation of such information may be the actual trait, or this feature may be typologically common features of the areas' languages. Visibility/invisibility opposition in the demonstrative system could be a feature connecting the Great Basin and a few languages of the southern Plains. However, without frequency data, anything more than speculation is not possible.

Table 37: **Features Possibly Diffused into Great Basin Through Contact with Southwest and Californian Languages**

Feature
-vce vowels, nasals & semivowels
Mid vowel
ŋ
Reduplication
Dual
Inclusive/exclusive
Evidential markers in the verb
Instrumental prefixes in the verb
Locative-directional markers in the verb

The Great Basin appears to be linked to the Southwest, southern California, and possibly the southern Plains, however, as with the Southwest, more focused research is required to determine the true amount of diffusion, if any, that has affected and come out of the Great Basin languages.

4.3.2. Sherzer (1976)'s Features of the Plains

In this section I will examine some of Sherzer (1976)'s features of the Plains. All of my research has suggested that only the southern Plains languages are connected to the Southwest so my examination here will focus on them.

Table 38: **Whole Areal Traits of the Plains**

Feature
Pronominal plural

Table 39: **Features Which are Absent in the Plains**

Feature
7-vowel system
2-stop series (+/-vce) system
2-stop series (-vce/ glottalized) system
Retroflex sounds
tθ
q
q^w

Feature
Pharyngeal fricatives
χ̣
χ̣^{w}
ɣ^{w}
h^{w}
l’
ɬ’
l^{y}
ɬ^{y}
Glottalized nasals
n^{y}
ŋ
Glottalized r
r/l
Glottalized semivowels
Reduplication used to signify diminutive
Masculine/feminine gender
Verbal subject markers are exclusively independent pronouns

Table 40: **Central Areal Traits of the Plains**

Feature
x

Feature
h
Prefixation of nominal person markers
Alienable/inalienable nominal possession classes
Overtly marked nominal plural
Inclusive/exclusive plural
Nominal locative suffixes
Prefixation of verbal subject markers
Suffixation of verbal tense-aspect markers
Evidential markers in verbs
Locative directional markers in verbs

Sherzer (1976) says that all central areal traits of the Plains are common across North America so that it is very unlikely that diffusion played a role.

Table 41: **Regional Areal Traits of the Southern Plains**

Feature
Phonemic pitch
k^w
2-fricative series (+/- vce) system
r

Feature
Pronominal dual
Nominal dual
Visible/invisible opposition in demonstratives

Phonemic pitch: As I argued in (4), this is possibly a feature which connects the southern Plains' languages to the Pueblos and possible Yaqui. This feature has probably not arisen through chance innovation so that it is probably an areal trait of the Greater Southwest.

k^w: As I argued in (9), this feature's distribution and cross-linguistic infrequency suggests that this is a likely areal trait of the Greater Southwest.

Dual marking: As I argued in (35), dual marking is another possible Greater Southwest areal trait and is worth further research to see if there is a connection between its appearance in the Pueblos, Great Basin, and the southern Plains.

4.4. Greater Greater Southwest

Johanna Nichols (cf. Nichols 1990, 1992, 1997, 2008) has posited that the Americas as a whole can be said to constitute a linguistic area. Although she finds a number of features shared across the Americas, I disagree with her conclusion. Linguistic areas are ideally meant to reflect areas of intense contact in a geographic region. Linguistic areas are meant to illuminate areas of the world where contact among speakers of different languages has been especially intense and this contact has led to linguistic diffusion. The problem with positing the Americas as a linguistic

area is that many languages have, in all likelihood, never been in direct contact. For example, languages in South America, such as Quechua, have probably never had any contact with speakers of the Algic languages of North America. It is also likely that any indirect contact between Quechua and Ojibwa (an Algic language) speakers would have taken place through many degrees of separation to the point where any convergent development can be much more easily attributed to the many languages which lie in between.

In my proposal of a Greater Southwest, I realize that speakers of southern Plains languages and southern Californian languages may or may not have had direct contact. However, indirect contact would have only taken place with one or two intermediate languages because speakers of both areas are in contact with languages such as Yuman. The same cannot be said for Quechua and Ojibwa where a chain of many languages and language families would be required for any kind of indirect contact. Many WALS chapters show certain features concentrating in the Americas, such as vowel inventories consisting of 2-4 vowels, which is only found in any significant frequency in the Americas, Oceania, and the Middle East (Maddieson 2011a). There are other explanations for this than areal, though, the first language families to enter the Americas could have contained features which made certain features more likely to develop, such as small vowel inventories and verb initial unmarked word order (Dryer 2011a). If further research does show the Americas to be a linguistic area, then linguists must look more deeply into the differences between features gained through diffusion and features gained through chance. Some linguists see diffusion as a likely source for features which do not have complete paradigms (cf. Bereznak 1995), although Campbell, Kaufman & Smith-Stark (1986) caution that

native features can have incomplete paradigms and borrowing languages can expand the functions of a specific feature (as was likely the case for Hopi ŋʲ (26)).

In summation, the Americas are far too vast a region to propose as a linguistic area because there is no way that contact could have taken place between many of the languages without several intermediaries. The status of "linguistic area" should be reserved for regions where either direct contact has taken place between all of the languages or indirect contact has taken place but only through a minimal number of intermediaries (i.e. one or two). This limit on linguistic areal classification ensures that regions which are classified as linguistic areas offer information on speaker contact and not just areas where linguistic features bundle. Shared traits in the Americas could be due to the features of the languages which originally entered the Americas, chance, or even strings of linguistic areas, however, to my knowledge areal strings have never been identified and require much more research.

5. CONCLUSION

In the field of areal linguistics there has yet to be a single text or body of texts which define the various terms used in discussing and analyzing linguistic areas and their traits. This thesis has aimed to do just that. In section 2.2.1.1., I proposed a definition for areal traits which should work for the analysis of all posited and to-be-posited linguistic areas, although only time and further research can prove the validity of my assertions. I have tried to set and define terms for evaluating linguistic areas and their traits. These terms include: areal pressure, relative strength, markedness, expectedness, borrowability, and diagnostic/non-diagnostic. I have also asserted that a distinction must be made in areal linguistics between the relative strength of an area and its

intensity. This distinction is important because the amount of influence that a particular linguistic area may have had on its languages is not related to the validity of that area. As I argued in 2.2.1.1., areal traits may be more difficult to find in certain areas depending on the characteristics of the languages in the area. Another problem with using intensity is that, as of yet, no research has determined how much contact is required for the diffusion of different linguistic features. While Tadmor, Haspelmath & Taylor (2010) have researched lexical borrowability, linguists have not done this for more structural linguistic features. Because of this, much more research is required before intensity is a useable concept for comparing linguistic areas.

At this point it seems that relative strength, geographic size, and linguistic size (that is number of included languages) of a given linguistic area are the primary tools that linguists have used in comparing linguistic areas. I do not believe that this reflects a significant gap in linguistic knowledge. Linguistic areas are most useful in helping to identify areas of intense speaker contact. The fact that the Balkans languages appear to have converged more than the Clear Lake languages does not necessarily mean that any less contact took place in the Clear Lake area, since intense contact was required for both areas to develop. What it may suggest is that Clear Lake languages are less susceptible to linguistic diffusion than Balkans languages. Although, as aforementioned, it could also reflect a disparity in the amount of work done on the two areas or a difference in obviousness of diffused features. I also briefly examined Dixon (1997)'s theory that many language families may actually have resulted from linguistic areas. Some linguists (Bereznak 1995) have posited that the Kiowa-Tanoan family may actually have four separate branches (Kiowa, Tewa, Tiwa, and Jemez) as opposed the more traditional two (Kiowa and Tanoan). These linguists argue that it is the Pueblo region's influence and not close genetic

relation that has caused these Tanoan languages to appear more similar and developmentally diverge from Kiowa (which lies outside the Pueblo region).

In my discussion of the Pueblos I have shown that the Pueblos are a strong linguistic area with a number of traits which have diffused throughout the area. Despite Bereznak (1995) only finding two diagnostic traits of the Pueblos, I found several which I believe can be used to outline the linguistic area. One reason for this discrepancy is differing definitions of diagnostic traits. While I argue that a trait's diagnostic status is not related to its relative strength, Bereznak (1995) seems to mix these so that she does not consider weak traits as possibly diagnostic, even though I see no reason that they cannot be. The Pueblo linguistic area does not hinge on the diagnostic status of these traits, the pattern of the isoglosses in the Pueblo region very clearly marks the area. It is important for linguists to continue to look for linguistic areas throughout the world. Although I found several diagnostic traits for the Pueblo linguistic area, I believe the more frequent make-up of linguistic areas will be the bundling of many features which have only diffused into one or two languages. I predict that diagnostic traits will not be the norm and will only be found in select areas where other factors, aside from normal diffusion and interaction, have likely been at play.

My examination of the North American Southwest is by no means complete. As I pointed out in 4.2, there has been very little to no research done on diffusional effects in the Southwest. Sherzer (1976) is the major work on Southwest areal linguistics. However, he does not include any Southwestern languages south of the U.S.-Mexican border. Languages such as Yaqui, Tepehuan, Mayo (which are all Uto-Aztecan), Seri (an isolate), and the Yuman languages of Baja California, are likely included in the Greater Southwest linguistic area. Because the literature on

areal effects in the Southwest is lacking, the linguistic connections between the Southwest languages in Mexico and the languages of the posited Greater Southwest are yet to be determined.

However, there has been enough research done on the Southwest to make some preliminary conclusions. The Southwest connects the southern Californian languages to the Great Basin, Pueblos and possibly the southern Plains. Based on the literature I found, the Southwest appears to be more of a bridge area instead of a linguistic area of its own. The main reason for this is that the Yuman languages, which were the object of most of the comparative Southwest literature, show just as strong a connection with the southern Californian languages (cf. Hinton 1991) as they do to the Great Basin and Puebloan languages so that it would be inaccurate to place the Yuman languages solely in the Southwest. Further research specifically into diffusion among the Southwest languages may find features which do show that the Southwest is an area within the posited Greater Southwest. This research could also offer further evidence showing the Southwest to be a bridge area, as current evidence suggests.

As I have argued in 2.2., linguistic areas are essential for studying historical and, more importantly, prehistorical human interaction. The fact that the Pueblos are such a strong linguistic area affirms the archeological and anthropological research, which also shows this area to be a tightly knit cultural and geographical unit. Even if further research does show the Southwest to be a linguistic area of its own, the ties between southern Californian, Great Basin, Puebloan, Southwest, and southern Plains languages lines up with archeological research, which has found trade evidence throughout much of these areas (Ford 1983). Examination of the linguistic connections among these areas could not only illuminate a larger trade area than scholars

previously posited, but also help put the goods found in better context. While lexical items, in general, cannot be considered areal traits, they can help scholars understand the nature of speakers' contact. For example, the reason why so many English words related to law, power, rule, and the elite class, are French borrowings is because French was the language of power after the Norman Invasion of 1066. In this case the nature of contact between English and French speakers as one of subject and lord affected the likelihood that certain lexemes would be borrowed over others and this would be inferable from linguistic evidence independently of our historical knowledge of this contact situation.

For the general field of linguistics, the major implication from the Pueblo linguistic area is the relative lack of lexical borrowings. As I discussed in 4.1.4., Campbell & Grondona (2012) found a similar situation in Nivaclé and Chorote where structural features of these languages allow them to resist lexical borrowings more easily than other languages so that this case is only minorly applicable to the Puebloan languages. As Bereznak (1995) mentions, it is also possible that there are, in fact, many lexical items diffused between Puebloan languages but that various factors have made those loan words less obvious. It is important to answer this question because it could have implications for borrowability as linguists understand it. That is to say, if further research still finds a dearth of Puebloan loan words, then it could suggest that lexical items are less diffusible than previously thought. It could also help scholars figure out when the Pueblos developed such negative attitudes towards "foreignisms" (Bereznak 1995:158). In this case the attitude might have come about as either a reaction to Spanish colonialism or due to prehistorical factors and events. This is important because it puts the foreigner-wariness in context so that scholars studying the Pueblos can better account for it.

More specific to the Pueblos and Southwest, further research into these regions can effect the family trees of the Kiowa-Tanoan family and possibly the Northern Uto-Aztecan subfamily. I have discussed the Kiowa-Tanoan family tree previously in this section. Because the Greater Southwest area includes most of the Northern Uto-Aztecan languages, the similarity between the languages could be due to areal effects instead of genetic.

Throughout this thesis I have found a number of areas which require further research in order to better understand diffusional effects and areal phenomena as well as the prehistory of the North American Southwest, Pueblos, southern California, Great Basin, and southern Plains. Some of the major areas remaining for future research are: borrowability of non-lexical linguistic features; hierarchy of non-lexical linguistic features (in line with Tadmor, Haspelmath & Bradley 2010); diffusional effects across the Southwest and the Greater Southwest as a large linguistic area; and internal reconstruction of language isolates such as Zuni, Coahuilteco, and Seri.

6. Appendix A: Some accepted Linguistic areas and their defining areal traits

The Balkans (Europe) (Bereznak 1995:28-9)

Languages: Rumanian, Bulgarian, Macedonian, Albanian, Greek, Serbo-Croatian

Number of major areal traits: 10

Major proposed areal Traits: a central vowel, either ə or ɨ (found in all Balkan languages except Greek and Macedonian); vowel harmony (widespread in the area but specifics on which vowels undergo harmonization differ from language to language); syncretization of dative and genitive so that they are identical in form and function (found in all Balkan languages except Serbo-Croatian); postposed article (found in all Balkan languages

except Greek); periphrastic future tense with an auxiliary corresponding to English 'want' or 'have' (found in all Balkan languages); loss of the infinitive (Macedonian, Greek, and Bulgarian have essentially lost the category, the original infinitive has been replaced in Albanian and is a restricted category in Daco-Rumanian); pleonastic personal pronouns used with animate objects (found in all Balkan languages); forms of the numbers 11-19 literally translate to 'one over ten' for eleven, 'two over ten' for twelve, etc. (found in all Balkan languages); merging locative and directional expressions (found in Greek, Rumanian, and Bulgarian)

South Asia (Bereznak 1995:29-35)

Languages: many hundreds from the Indo-European, Dravidian, and Munda families

Number of major areal traits: 8

Major proposed areal traits: retroflexed consonants (found across languages in India and into languages in Afghanistan and Baluchistan); classificatory systems (found in Indo-Aryan, Dravidian, and Munda languages); distribution of affricates as [ts] and [dz] before back vowels and [ʧ] and [ʤ] before front vowels (only found in Indo-Aryan and Dravidian languages in central India); replacement of the initial CV syllable of a word with another syllable with the meaning 'and the like' (found in Indo-European, Dravidian, and Munda languages); Bereznak (1995:31-2) cites Emeneau (1980:7) as identifying the areal trait "expressives" which are "'a form class with semantic symbolism and distinct morphosyntactic properties,' which may refer to sounds, other perceptions, and feelings" (found in Indo-Aryan, Dravidian, and maybe Munda); honorific distinctions in the second and third person reference (see Emeneau 1980:13 for

further discussion) (found in Indo-Aryan, Dravidian, and possibly Munda); calque of the usages of Dravidian *-*um* onto Sanskrit *api* which can be used to mean 1. 'also' 2. 'and' 3. 'even' 4. "[indicates] that all members of a group participate in a statement" (Bereznak 1995:33) 5. 'all who' with an interrogative pronominal form (found in Dravidian and Indo-Aryan); dative construction in which the experience is the grammatical subject and the experiencer is put in the dative case (found in Indo-European, Dravidian, and Munda).

Northwest Coast (North America) (Bereznak 1995:36-9)

Languages: Eyak, Tlingit, Haida, the Tshimianic languages, the Wakashan languages, the Chimakuan languages, the Coast Salishan languages, Lower Chinook, Alsea, Siuslaw, Takelma, Kalapuya, Coos, and some Pacific Coast Athapaskan languages. (Mithun 1999).[61]

Number of major areal traits: 4

Major proposed areal traits: glottalized stop series (found in all Northwest Coast languages); presence of several lateral sounds (ɬ, ƛ, ƛ̓, ƛ') with some languages lacking /l/ (e.g. Clallam, Nootka, and Tlingit) and oppositions in the back of the mouth (q, k^w, x^w, $x̣^w$, and q^w) Bereznak (1995) says they are widespread but do not occur in all Northwest Coast languages); glottalized nasals and semivowels (found in Haida, Tsimshian, Kwakiutl, Nootka, Bella Coola, Squamish, Twana, and Tolowa with the exception of

[61] This linguistic area is possibly much larger and could have many subareas within it. However, as of yet there has been no definitive research on this.

glottalized semivowels); numeral classifiers and evidential markers (found in many languages of the Northwest Coast).[62]

Arnhem Land (Australia) (Heath 1978 and Bereznak 1995:39-41)

Languages: Ritharngu, Nunggubuyu, Ngandi, and Warndarang

Some proposed areal traits: morpheme-final glottal stops (found in Ritharngu and Ngandi); fortis/lenis distinction in stops (found in Ritharngu, Ngandi, and Nunggubuyu); interdentals (Yuulngu (family which contains Ritharngu) and Proto-Ngandi-Nunggubuyu); pressure from Warndarang caused Nunggubuyu to shift fortis stops to lenis stops and, thus, chain shift old lenis stops to become continuants; pressure from Warndarang also caused sporadic change of glottal stop to Ø, g, and j in Nunggubuyu; contact with Warndarang caused the five-vowel system of Proto-Ngandi-Nunggubuyu to collapse to a three-vowel system in Nunggubuyu.

Southern California (Bereznak 1995:41-3)

Languages: the Takic branch of Uto-Aztecan and Yuman languages of southern California

Some proposed areal traits: k^w/q^w contrast in Luiseño; s/ʂ contrast in Takic; x^w in Cupan, ñ and l^y in Cahuilla-Cupeño and Serrano; r/l distinction in Takic (except Gabrielino); small vowel inventory in Cahuilla-Cupeño; consonantal sound symbolism in Cupan; ɬ and $ɬ^y$ in Cahuilla and Diegueño; t/ʈ distinction in Luiseño, Cupeño, and Diegueño.

[62] Many of the areal traits proposed by Sherzer (1976), including some of the major ones above, like glottalized stops, labialized velars and velar fricatives are inherited traits for most of the languages that they occur in. Therefore, he relies heavily on areal pressure inducing shared retention (Bereznak 1995).

Southeast (North America) (Mithun 1999:319-20)

Languages: the Muskogean languages, Ofo, Biloxi, Chitimacha, Atakapa, Tunica, Natchez, and Yuchi make up the "core" languages (Mithun 1999:319) and the peripheral languages are: Cherokee, Tuscarora, Caddo, Tutelo, Catawba, Omaha-Ponca, Kansa-Osage, Quapaw, Powhatan, Nanticoke, Pamlico, Shawnee, Karankawa and Tonkawa

Major proposed areal traits: bilabial fricatives (found in all Muskogean languages, Yuchi, Ofo, and Tuscarora); ɬ (found in Muskogean, Timucua, Atakapa, Natchez, Yuchi, Ofo and Cherokee); retroflex sibilants (found in Creek, Hitchiti, Mikasuki, Alabama, Natchez, Tunica, Quapaw, and Mobilian Jargon); extensive use of positional verbs 'sit', 'stand', and 'lie' for specifying location, as auxiliaries, indirect object classification[63], number distinction, and many other uses (found in Muskogean languages, Tunica, Atakapa, Chitimacha, Caddo, Biloxi); extensive borrowing among individual languages in the area.

Clear Lake (North America) (Campbell 1997)

Languages: Lake Miwok, Patwin, Eastern Pomo, Southeastern Pomo, and Wappo

Some proposed areal traits: retroflexed dentals, $l_{[-vce]}$, and glottalized glides (both found across the linguistic area).

Colombian-Central American Area (Campbell 1997)

Languages: Chibchan languages, Lencan, Jicaquean, Misumalpal, Chocoan, and Betoi

Some proposed areal traits: voicing contrasts in stops and fricatives; exclusive SOV word order; postposition; mostly Genitive-Noun order; Noun-Numeral order; clause-initial

[63] 'stand' for vertical objects, 'sit' for rounded or compact objects, and 'lie' for horizontal objects.

question words; absence of gender opposition in pronouns and inflection; “morphological economy” (Campbell 1997:347).

Orinoco-Amazon Linguistic Area (Campbell 1997)

Languages: Yanam, Yanomam, Yanomamɨ, Piaroa, Baniwa, Wapixana, Baré, Mandahuaca, Warekena, Baniva, Panare, Yabarana, Mapoyo, Yekuana, Pemón, Kapong, Makuxi, Waiwai, Waimirí, Hixkaryana, Warikyana, Jotí, Uruak, Sapé, Maku, and over thirty extinct languages.

Common typological traits: shared pattern of discourse redundancy; ergative alignment (except in a few Arawakan languages); O-before-V order (except in a few Arawakan languages); lack of active-passive distinction; relative clauses formed by apposition and nominalization.

7. APPENDIX B: CULTURES OF THE NORTH AMERICAN SOUTHWEST

Culture	Location of Group	Native Language
Zacatac	Northern Mexico	
Karankawa	Gulf Coast of Texas	unclassified
Tahue		unclassified
Acaxee	Sierra Madre Occidental, eastern Sinola, and northwestern Durango, Mexico	Uto-Aztecan
Xixime	Sinola and near Durango, Mexico	unclassified
Tepehuán	Northwestern Mexico	Uto-Aztecan
Toboso	Chihuahua and Coahuila, Mexico	
Mayo	Sonora and Sinaloa, Mexico	Uto-Aztecan
Tubar	Southern Chihuahua, Mexico	Uto-Aztecan
Guarijío	Chihuahua and Sonora, Mexico	Uto-Aztecan
Tarahumara	Northwestern Mexico	Uto-Aztecan
Concho	Rio Conchos, Mexico	
Yaqui	Tucson, Arizona and Sonora, Mexico	Uto-Aztecan
Pima Bajo	Northern Mexico	Uto-Aztecan
Seri	Sonora, Mexico	Isolate
Eudeve	Sonora, Mexico	Uto-Aztecan
Jova	Sonora, Mexico	Uto-Aztecan
Tehuima	Sonora, Mexico	Uto-Aztecan

Culture	Location of Group	Native Language
Suma	Northern Chihuahua, Mexico and Rio Grande River valley, Texas	unclassified
Jumano	Northern Chihuahua, Mexico and Rio Grande River valley, Texas	unclassified
Mescalero Apache	South central New Mexico	Apachean
Jicarilla Apache	New Mexico	Apachean
Chiricahua Apache	Southwestern New Mexico, southeastern Arizona, northern Sonora, and Chihuahua, Mexico	Apachean
Jocomo	Northwestern Chihuahua	unclassified
Jano	Northwestern Chihuahua	unclassified
Western Apache	East central Arizona	Apachean
Tohono O'odham	Sonoran Desert (southeastern Arizona and northwest Mexico)	Uto-Aztecan
Pima Alto	Central and southern Arizona	Uto-Aztecan
Cocopah	Baja California, Arizona, and Sonora, Mexico,	Yuman
Quechan	Southern California and lower Colorado River, Arizona	Yuman
Maricopa	Colorado River	Yuman
Yavapai	Arizona	Yuman
Havasupai	Grand Canyon	Yuman
Walapai	Northwestern Arizona	Yuman
Mohave	Colorado River	Yuman

Culture	Location of Group	Native Language
Halchidhoma	Lower Colorado River in California and Arizona	Yuman

8. APPENDIX C: PUEBLOAN CULTURES

Culture
Hopi
Zuni
Acoma
Laguna
Cochiti
San Felipe
Santa Ana (Tamaiya)
Santo Domingo (Kewa)
Zia (Tsi'ya)
Nambé
San Juan (Ohkay Owingeh)
Pojoque
Arizona Tewa (Hopi Tewa)
San Ildefonso (P'ohwhóde)
Santa Clara
Tetsuque (Tetsuge)
Picuris
Sandia
Taos

Culture
Ysleta del Sur (Tigua)
Isleta
Jemez

9. APPENDIX D: THE LANGUAGE FAMILIES OF THE SOUTHWEST[64][65]

Uto-Aztecan
Northern Uto-Aztecan
- Numic (Plateau Shoshoni)
  - Western
    - Paviotso-Bannock-Snake (Northern Paiute)
    - Monache (Mono) [moribund]
  - Central
    - Shoshoni-Goshiute, Panamint (Timbisha, Tümpisa Shoshoni, Tümbisa Shoshoni)[moribund], Comanche [moribund]
  - Southern
    - Southern Paiute
    - Ute, Chemehuevi
    - Kawaiisu [nearly extinct]
- Tübatulabal [nearly extinct]
- Takic (Southern Californian Shoshoni)
  - Serran: Serrano [dormant], Kitanemuk*
  - Cahuilla [moribund], Cupeño [dormant]
  - Luiseño [nearly extinct]-Juaneño?
  - Gabrielino*-Fernandeño*
- Hopi

Southern Uto-Aztecan
- Pimic (Tepiman)
  - Pima-Papago (Upper Piman)
  - Pima Bajo (Lower Piman)
  - Northern Tepehuan, Southern Tepehuan
  - Tepecano*
- Taracahitic
  - Tarahumaran
    - Tarahumara (Northern variety is nearly extinct and Southwestern variety is moribund)
    - Guarijío (Huarijío)
  - Tubar*
  - Cahitan (Yaqui-Mayo-Cahita)
  - Opatan
    - Opata*
    - Eudeve (Heve, Dohema, Teguima)*
- Corachol-Aztecan
  - Cora-Huichol
    - Cora
    - Huichol
  - Nahuan (Aztecan, Nahua, Nahuatlan)
    - Pochutec*
    - Core Nahua
      - Pipil (Nahuate, Nawat) [nearly extinct]
      - Nahuatl (Mexicano, Aztec)

[64] In the following language family tables (*) signifies that the language is extinct and (?) signifies that there is no information on the status of the language currently.

[65] Language trees taken from Campbell (1997) and language status information taken from Ethnologue.com. Where speaker population information in not available on Ethnologue, I will use Campbell (1997)

Yuman
Pai Subgroup (Northern Yuman)
    Upland: Walapai-Havasupai-Yavapai
    Paipai (Akwa'ala) [moribund]
River Subgroup (Central Yuman)
    Mojave (Mohave) [moribund], Maricopa, Quechan (Yuma)
Delta-California Subgroup
    Cocopa (Cocopah)
    Diegueño: Iipay (Ipai, Mesa Grande), Tiipay (Tipai, Jamul), Kumeyaay (Campo, Kumiai)
Kiliwa [nearly extinct]

Kiowa-Tanoan
Kiowa [moribund]
Tanoan
    Tiwa
        Northern Tiwa
            Taos
            Picuris
        Southern Tiwa
            Isleta
            Sandia
        Piro
    Tewa
        Hopi Tewa (Arizona Tewa)
        Santa Clara-San Juan
    Jemez

Keresan
Western Keresan
    Acoma
    Laguna
Eastern Keresan
    Zia-Santa Ana
    San Felipe-Santo Domingo
    Cochiti

Zuni (isolate)

Coahuiltecan (isolate)

Apachean (Subset of Athapaskan)
Navajo
Apache
    Jicarilla
    Lipan [dormant]
    Kiowa Apache (Oklahoma Apache, Plains Apache) [nearly extinct]
    Western Apache (San Carlos, White River, Cibecu, Tonto (Northern and Southern))
    Chiricahua
    Mescalero

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